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# Kaumātua: Identity, Mental Wellbeing, and Neighbourhood/Home Supports (Kaumātua: Tuakiri, Oranga Hinengaro me ngā Tautoko ā-Kāinga).

A thesis presented in partial fulfilment of the requirements for the degree of

Master of Arts

in

Psychology

at Massey University Albany

New Zealand.

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2026

**Abstract**

The older populations are living longer and there is a concern is that they are prone to psychological distress. Kaumātua are older Māori, who are the indigenous people of Aotearoa/ New Zealand that suffered under the consequences of colonisation assimilation; socioeconomical disadvantage, culture alienation and health disparities. Preceding research has suggested that kaumātua with a strong cultural identity are less likely to suffer psychological distress.

The primary aim of this study was to investigate whether, and addition to having a secure cultural identity, positive perceptions of their neighbourhood, housing stability and satisfaction with housing would mitigate the negative impacts of psychological distress. Utilising a cross-sectional survey design, data from older Māori (55+ years old) who participated in the Health Work and Retirement (HWR) survey, in 2020 (n=1627) and 2024 (n=2327) were analysed. A secondary aim was to examine different cultural identity measures used in the HWR. The measures used in the 2020 and 2024 surveys, were the Multidimensional Model of Māori Identity and Cultural Engagement (MMM-ICE3; perceptions of cultural identity), the Māori Cultural Embeddedness scale (MaCES; measures the individual's everyday engagement with cultural aspects), marae visits, and te reo ability. Weak positive correlation suggested that they are measuring different cultural identity concepts.

A correlational analysis found significant relationships between cultural identity measures with loneliness, depression and anxiety, and cultural proficiency with depression. A multiple regression equation indicated that only housing stability moderated the relationship between cultural identity (everyday cultural engagement) and loneliness. Stronger cultural identity was related to lower emotional loneliness. The longer the time in one home, the stronger this relationship. This suggests that secure long-term housing additionally protects kaumātua from

emotional loneliness. In general, kaumātua with a secure identity with strong neighbourhood connections and housing stability are less likely to experience psychological distress. Implications of these findings include the need for policy and intervention to focus on stable housing, supportive neighbourhoods, and opportunities for cultural engagement. Further research is needed to investigate the measurement of cultural identity among older Māori.

**Acknowledgement**

Kia ora tātou katoa.

Firstly, I want to humbly thank my academic supervisor Christine Stephens for her patience, guidance and expertise, her support has been invaluable for me that motivated me to be able to complete my thesis. The Massey University Health and Ageing Research Team, for allowing me access and use of the data from the Health and Wellbeing Research Survey in my thesis. And the survey participants past, present and future I specially thank you as your contribution allows for further research and insights to aging in Aotearoa.

To Massey University Auckland staff, the librarians especially Tom, the academic services Nora and Nelly for their assistance and support, and the writing support services Michelle and James for their input writing advice and encouragement. To the School of Psychology at Massey University for your continued support in my academic journey at Massey.

My coworkers that kept asking me when I will finish my master's research, it inspired me to finish my studies I thank them for their annoying comments. Also, to my good friends that assisted me with their expertise and support Cuong, and Jason for your encouragement and being there for me listening to my issues. Finally, my beautiful mother Hine Te Apatu I am gratefully thank you for helping me financially, and emotionally, all the time when I was away from home, I cannot express my gratitude enough.

Nō reira, tēnā koutou, tēnā koutou, tēnā koutou katoa

## Glossary

Aotearoa; New Zealand

Ariki; paramount chief/ high chief

Haporitanga; sense of socialisation and human connection, a connected community

Hapū; sub-tribe/ clan

Haumarutanga; safety, security or protection

Kaitiakitanga; guardian/ guardianship

Kaumātua; older Māori person (elder status)

Kaupapa Māori; Māori approach (research)

Koro; older Māori male (can be of elder status)

Kuia; older Māori female (can be of elder status)

Iwi; Tribe

Mana; standing/ respect

Mana Motuhake; independence, manage one's affairs

Manaakitanga, hospitality/ kindness and support

Māori; indigenous people of Aotearoa

Marae; traditional meeting house

Mātauranga; Māori knowledge (traditional/ contemporary)

Pepeha; introductory statement of relationships

Pure; to make natural, purifying or cleansing

Rangatira; chief/ person of high rank

Rangatiratanga; self-determination and autonomy

Taha Hinengaro; mental health

Taha Tinana; physical health

Taha Wairua; spiritual health

Taha Whānau; family health

Taiao; nature, the natural world/ environment

Tāngata Whenua; people of this land

Te Ao Māori; Māori world or perspective/ lense

Te Reo/ Reo; Māori language

Te Tiriti o Waitangi/ Te Tiriti; The Treaty of Waitangi

Te Whare Tapa Whā; indigenous Māori holistic wellbeing model

Tikanga; traditional and customary practices

Tūpuna; ancestor/s

Tūrangawaewae; “place to stand” tribal area/ land, ancestral mountain, river, or marae

Waiata; traditional song, chant or hymn

Wairua; spirit/ spiritual, non-physical

Whakamā; shame/ embarrassment

Whakapapa; genealogy/ line of descent

Whakawhānaungatanga; establishing, building, maintaining relationships and connections

Whānau; family/ extended family

Whānaungatanga; relationship/kinship and connections

Whāngai; adopted/ foster child

Wharenui; communal or large house

Whenua; ancestral/ tribal land, waterways

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## Chapter 1: Introduction

Globally, lifespans have increased dramatically, especially in the wealthiest countries, in the recent past (World Health Organization, 2025), because of advancements in medical technology, public health practices and improved living standards (Crimmins, 2015). According to global statistics, 1 in 6 persons in 2030 will be over 60 years old (World Health Organization, 2024). The WHO estimated that in 2020 there was an increase from 1 billion older adults to 1.4 billion, which will almost double to 2.1 billion older people by 2050 (World Health Organization, 2024). Moreover, there will be a tripling of people, who are 80 years and older, between 2020 to 2050 to 426 million. In Aotearoa/ New Zealand older people that are over 65 years, and this is projected to reach about one million in six years (Statistics New Zealand, 2022). By 2020 this number will grow to 1.3 million and by 2050 1.5 million. This older adult population growth has created a substantial increase in research on older people's wellbeing over the last 10 to 15 years (Bennett & Liu, 2018; Dominko & Verbič, 2019). As the ageing population globally increases the need for more research into this population becomes more important than ever, to gain new knowledge and to improve our understanding of issues older people will experience as they live longer. Research into older people is vital to address the needs of the older population demographic; improving their quality of life, promotion of active aging, maintaining their independence, financial status, tailored health and support services. For Māori older population of Aotearoa disparities in the areas mentioned before is well identified and documented from research (Bennett & Liu, 2018).

Wellbeing is crucial for overall health and happiness. There is no common definition for wellbeing however, it is also referred to as a complex combination of a person's mental, social, emotional, physical health, cultural connectedness and general happiness, sense of purpose and life satisfaction (Singh et al, 2013). This definition provides a diverse

conceptualization of wellbeing that emphasizes the interconnectedness of different aspects of a person's life, which is shaped by that individual's cultural ethnicity, values, beliefs, their experiences, life opportunities, background/ upbringing and change over time (McCallum & Price, 2016). In order to better understand wellbeing, the OECD has broadly defined the concepts, domains and dimensions of wellbeing, with key characteristics to measure and understand an individual's quality of life (Organisation for Economic Co-operation and Development, 2013). These characteristics are (a) economic wellbeing, which establishes a person's control of their resources and expenditure possibilities, (b) quality of life: an individual's qualities that are not monetary that influence life opportunities which have innate value for a person under various contexts and culture, (c) sustainability, which relates to people's socio-economic circumstances, and the environment in which they live. Although wellbeing can be divided into these three characteristics, it is important to recognise that the concept is holistic and involves many influences. A model can capture this and a Māori model like Te Whare Tapa Whā is particularly valuable in terms of illustrating the holistic and interconnected nature of people's wellbeing. This holistic indigenous wellbeing model by Durie (1985) describes Māori health and wellbeing framework as a wharenui (communal house) with four pillars representing four dimensions of Māori wellbeing and health. The dimensions are taha tinana (physical health), taha wairua (spiritual health), taha whānau (family health) and taha hinengaro (mental health); and if a dimension is damaged subsequently the person or collective becomes unbalanced or unwell. Studies of wellbeing in older people have focused on important aspects that impact their health negatively, namely, loneliness, anxiety, and depression (Alpass & Neville, 2003; Blazer, 2009; Parata, 2023; Stephens & Bavarsad, 2025; Wright-St Clair et al, 2017)

### 1.1 Loneliness

The WHO Commission on social connection suggests that in current Global Estimates,

1 in 4 older adults experience loneliness and disconnection (World Health Organization, nd). Loneliness can be categorized as emotional or actual/ social (Alpass & Neville, 2003; Parata, 2023; Tragantzopoulou & Giannouli, 2021). Emotional loneliness is also known as perceived or subjective loneliness and is categorized as a person's perception of how they feel. While actual or social loneliness is the lack of connection with another person. This research focuses on emotional loneliness, which was measured in the data. Although wellbeing statistics in Aotearoa for older adults feeling lonely have been stable, decreasing from 37% percent in June 2020 to 34% in March 2021 (Statistics New Zealand, 2021). The General Social Survey (GSS) 2021 describes older adults as being lonelier than ever , increasing from 27% in 2018 to 36% in 2021 (Statistics New Zealand, 2022a). The 2018 GSS analysis found that Māori and Asians were particularly at risk of loneliness (Caspi et al, 2006; Statistics New Zealand, 2024).

The literature has found that loneliness is linked with depression and is one of the most widespread mental health wellbeing issues the elderly are facing currently (Caycho-Rodríguez et al, 2025). Consistently the negative health impacts of perceived loneliness have been associated with older people's reduced mental wellbeing and life satisfaction, which is a major health concern (Lopez et al, 2024). Research into older people's wellbeing has been focused on the concept of loneliness as a predictor and contributor to poorer health and social outcomes for older people (Parata, 2023). Further research has identified some of the drivers of depression in older persons are economic status, loneliness, support networks, isolation, neighbourhoods and social/ community participation (Barbosa et al, 2019; Stephens et al, 2010). For example, a review by Wright-St Clair et al. (2017) found that loneliness is significantly related to depression, isolation, living alone, suicidal ideation, being an immigrant, having visual impairment, being female and being Māori in Aotearoa. Research such as this suggests that being Māori and being older is a strong predictor of loneliness, which is associated with depression, poor wellbeing, and ultimately negative health outcomes.

## 1.2 Depression and Anxiety in Older People

The WHO stated that depression and anxiety in older people, in part due to loneliness, are the most common mental health conditions (World Health Organization, 2023). Sun et al. (2024) found that older adults suffering from social anxiety were not able to expand their social network, because they tended to avoid social situations. This anxiety perception feeds into a dysfunctional interpersonal loop of negative self-reinforcement with adverse effects like loneliness, low self-esteem and stress (Parata, 2023). In Aotearoa, in 2013/14 4.4% of older adults (75+ years old) reported psychological distress (Ministry of Social Development, 2016), with Statistics New Zealand's (2024) Wellbeing Statistics reporting this figure being 26% in 2023.

Data from Te Rau Hinengaro (The New Zealand Mental Health Survey) indicated that Māori experience higher rates of common mental disorders like anxiety and depression compared to non-Māori (Browne et al, 2006). Furthermore, Māori often exhibit more severe symptoms associated with these disorders (Baxter et al, 2006). The significant effects of depression and anxiety on kaumatua impact directly on their wellbeing, wairua (spiritual health), and connection to whānau (or family) and culture. Implications and experiences of depression and anxiety for kaumatua may require a more traditional and culturally specific understanding of the symptoms to maintain their wellbeing (Te Tāhū Hauora Health Quality & Safety Commission, 2023).

Global Health Estimates (GHE) stated that in 2019 global suicides statistics showed that persons over 60 years old accounted for 27.2 percent (over quarter) of suicides (World Health Organization, 2023).

In Aotearoa, in 2013/14 4.4% of older adults (75+ years old) reported psychological distress (Ministry of Social Development, 2016), with Statistics New Zealand (2024) Wellbeing Statistics reporting this figure being 26% in 2023.

The literature does not illustrate that there is a strong relationship between depression and loneliness in older adults (Luo et al, 2012; Nicholson, 2024). Lee et al (2021, p. 49) expressed how "in longitudinal studies (ie, sample sizes of less than 400 participants) they found evidence of studies that had higher levels of loneliness that are associated with future depressive symptoms among older adults". Wolters et al (2023) said their research results support the association between depression and anxiety with social loneliness, yet more strongly with emotional loneliness.

Linking anxiety to loneliness in older populations it has been found that anxiety contributes to loneliness. Sun et al (2024) found that older adults suffering from social anxiety were not being able to expand their social network because they tended to avoid social situations. Maes et al (2019) describe similar cognitive behaviour and a hypervigilance to social threats and a self-defeating attributional style. This anxiety perception feeds into a dysfunctional interpersonal loop of negative self-reinforcement with adverse effects like loneliness, low self-esteem and stress (Parata, 2023).

Population predictions suggest that older Māori kaumātua 65 years and older will account for 11.9 percent specifically for Māori population and significant percentage of the general population in Aotearoa (Apiti, 2020). Data from Te Rau Hinengaro (The New Zealand Mental Health Survey) indicated that Māori experience higher rates of common mental disorders like anxiety and depression compared to non-Māori. Furthermore, Māori individuals often exhibit more severe symptoms associated with these disorders and disparities persist even when accounting for factors like age and socioeconomic status (Baxter et al, 2006). The significant effects of depression and anxiety on kaumātua impact

directly on their well-being, wairua (spiritual health), and connection to whānau (family) and culture. Implications and experiences of depression and anxiety for kaumātua may require a more traditional cultural specific understanding of the symptoms to maintain their wellbeing (Te Tāhū Hauora Health Quality & Safety Commission, 2023).

### 1.3 Impact of Older Adult Loneliness and Depression in Aotearoa

The growing impact of loneliness and depression on older adults has captured global attention. In 2018 the United Kingdom launched a loneliness strategy then appointing a loneliness government Minister and in the United States a committee was formed under the National Academies of Sciences, Engineering, and Medicine looking at health impacts of loneliness (Prohaska et al, 2020).

The *Better Later Life Strategy He Oranga Kaumātua Strategy 2019-2034* in Aotearoa is a central Government response to the increasing population of older adults in Aotearoa, also highlights the importance of social connection

In 2018 results from *the New Zealand Mental Health Monitor & Health and Lifestyles Survey* were reported through *Te Oranga Hinengaro –Māori Mental Wellbeing.* The key findings showed that Māori generally felt positive about their lives despite feeling considerable daily difficulties, but they experienced a greater burden of psychological distress, anxiety and depression than non-Māori (Russell, 2018). Bennett & Liu (2018) highlight that Māori suffer with higher rates of depressive and anxiety disorders than the general populations of Aotearoa. Locational circumstances can also affect kaumātua experiencing loneliness, Wood (2018) emphasized Māori kaumātua living in urban areas had access to services but felt lonely where rural kaumātua with less service access but more whanau support felt less lonely. The collective nature for Māori is a priority that clashes with Aotearoa's mainstream environment and is an significant factor between Māori and non-Māori (Parata, 2023). There are gaps in the literature so there is little specific data or evidence available with Māori

themselves, as well as limited comparison research between older kaumātua Māori with other or general older person populations for depression, anxiety and loneliness experiences. And population comparisons do not clarify understanding or allow for examination of these experiences. Wright-St Clair (2017) prioritizes in Aotearoa targeted social and health services for ethnic and minority groups in Aotearoa experiencing depression, loneliness and other mental psychological wellbeing issues.

Pushback commitments made by the current coalition Government gave directives for public services to deliver on need, not a race basis. This saw the disestablishment of the Māori Health Authority (Pae Ora) which targeted health initiatives specific for Māori, from a kaupapa Māori perspective emphasizing a holistic and culturally grounded approach to health and wellbeing (Pae Ora (Disestablishment of Māori Health Authority) Amendment Bill, 2024). Came et al (2024) paper critically critiques the Pae Ora Bill on its limited compliance with te tiriti and its potential to create extreme harm. With the poor history of Aotearoa's monocultural health system of *one size fits all* has found evidence of health initiatives and policies that tended to fail Māori. This total disregard for te tiriti and the cultural background of te ao Māori is being seen by Māori as another remnant of colonisation assimilation policy on tangata whenua and race discourses that deny equity for Māori (Black et al, 2023). Circumstantial impacts from this situation on kaumātua health will shift the focus of tangata whenua experiences in a more specific and detailed way.

### 1.4 Tangata Whenua

Parata (2023) highlights the disparities of being Māori and that loneliness, prevalent in minority ethnic and immigrant groups disproportionately affects Māori compared to non-Māori in Aotearoa. The indigenous older persons in Aotearoa are called kaumātua, kuia (female) or koro (male), traditionally older Māori adults were valued and respected for their ancestral knowledge (mātauranga), wisdom and life experience for the continuity and

survival of Māori culture. This is reflected in Durie (1999) a Māori tribe's mana (standing) relates to the kaumatua's authority and evident presence as they carry their people's integrity, status and tradition. What is important for kaumatua wellbeing is their identity, culture, language, relationships, (Gall et al, 2021).

Māori are the tangata whenua (people of the land), and the indigenous people of Aotearoa; Māori migrated by canoe to Aotearoa in the 13th Century establishing a distinct culture and society. Pre-colonial Māori society was characterized by a hierarchical yet interconnected social structure of whānau (immediate and extended families) which formed part of a larger hapū (clans or subtribes), and collectively these hapū belonged to an iwi (tribe), all based on shared ancestry and kinship, with the iwi being the largest social unit (Apiti, 2020; Bennett & Liu, 2018). This collectivist Māori society valued communal living, genealogical relationships a strong connection to the natural world and the environment they lived in, Māori believed in a sacred relationship and as caretakers or guardians of the natural world and the environment (Mead, 2016; Nuri, 2024). This strong interconnectedness is also reflected through te reo (the Māori language) acknowledging this in their pepeha (introductory statement of relationships); which Māori employ as a self-identification to their tribal affiliations, ancestral connections, their ancestral lands whenua (lands, waterways) (Ritchie & Skerrett, 2020). Māori social structure also included a hierarchal system, the ariki (paramount chief) decision making at a tribal level, rangatira (chiefs) decisions at a hapu level and older Māori adults are kaumātua (respected elder), koro (older adult male) or kuia (older adult female) made decisions at whānau level also, they nurtured and taught Māori children (Walker, 1984). This responsibility to pass on mātauranga (Māori common term for Māori knowledge) is the accumulated information integrating spiritual, cultural, social, and environmental knowledge. This encompasses Māori history originating from tūpuna (ancestors), their whakapapa interconnections between everything and everyone. It's based

on ancestry and descent, tikanga influencing the culture, holistic traditional practices teaching the correct way of doing things, guiding behaviour, within wairua Māori creativity, the metaphysical perspectives of the seen and unseen beliefs. Also taiao, environment understanding the intimate relationship Māori have with the natural world and the importance of kaitiakitanga (stewardship), through the oral tradition of te reo the language, stories in waiata song and its sacred preservation that is evolving through time (Apiti, 2020; Hikuroa, 2017; Te Kanawa, 2022). This body of knowledge is a way of being for Māori, of how to engage with the world from a te ao Māori (Māori worldview) perspective and through their cultural identity.

### 1.5 Cultural identity

Exploring the nuances and notions of cultural identity will be discussed briefly in general terms and specifically Māori cultural identity. Cultural identity can be referred to as having a sense of belonging to a particular culture, shaped by shared common characteristics of language, values, beliefs, practices, traditions and knowledge passed on to the future generations (Apiti, 2020). The importance of being interconnected for Māori is evident, identifying their cultural and personal relationships is described within their pepeha (one's connections and identity). The pepeha acknowledges ones-self, asserting their whenua (lands and bodies of water), tūpuna, whānau connections, tribal affiliations (iwi, hapū and marae) it can contain historic, current and future cultural signifiers so having a strong knowledge and understanding of te ao Māori builds a strong identity (Parata, 2023; Pere, 2006; Skerrett, 2023). However, cultural identity was challenged by the negative impacts on indigenous populations of colonisation and has eroded over time. The new colonized pakeha (Eurocentric) worldview displacing and systematically assimilating them from their natural ways of being (McLachlan, 2024; Smallwood et al, 2021).

Signing of the Te Tiriti o Waitangi (Treaty of Waitangi) is the founding document of Aotearoa in 1840 between the British Crown and Māori chiefs. Te tiriti enabled the British settlement in Aotearoa to establish British sovereignty, while also recognizing Māori land ownership and rights (Orange, 2021). Māori and Crown interpretations of te tiriti differed significantly, due to inappropriately translated key words with ambiguous meanings and with Māori chiefs relying on missionary advice when signing, this had effectively made te tiriti a unconvincing legal document (Walker, 1984). The subsequent process of English colonisation after the signing of te tiriti on Māori was profound and continues for Māori leading to significant forced socio-cultural replacement, cultural identity erosion, intergenerational trauma and health disparities (Smallwood et al, 2021). The enforcement of economic disadvantage through the intentional wholesale resource transfer of the whenua, natural resource confiscation, and the unintentional commuting of new diseases colonizing settlers brought with them had devastating consequences for Māori population numbers by 1901 they were at 6 percent and in 1911 5 percent of Aotearoa's population (Moewaka Barnes & McCreanor, 2019; Pool & Pool, 2015).

The Education Ordinance 1847 and the Native Schools Act 1867 mandated English as being the sole language of instruction in school. Ka'ai-Mahuta (2011) describes the erosion of the status of te reo Māori through state assimilation policies that discouraged and suppressed the use of te reo contributing to its decline. In a 1930 survey 96.6 percent of Māori children were estimated that could speak te reo at home, by 1960 only 26 percent Māori children could speak te reo and in 1979 te reo was at a predicted point of language death. Further contributing to this decline was the 1930s migration of Māori; 90 percent of Māori lived in rural areas, by the 1980s 80 percent of Māori were urbanised (May, 2023). It seemed the assimilation tools utilised were a success, the hope of a bicultural Aotearoa was but a dream

and the acceptance of the European society as being superior encouraged Māori to discard their own traditional ways, language and culture (Ka'ai-Mahuta, 2011)

However, the revitalisation of Māori culture after colonization involved efforts to reclaim and strengthen various aspects of Māori identity and traditions, particularly te reo, arts, and cultural practices. Resistance to assimilation, the extinction of the te reo, destabilisation of Māori social structures, traditional knowledge, practices and culture elimination, began around the 1960s and 1970s. Smith (1989) discussed the start of the resistance from isolated areas where te reo was still the first language, such as marae (traditional meeting house), Māori political activist students, radical groups, and the rise of a Māori middle-class. In the 1970s, a move away from assimilation and the recognition of the importance of Māori culture provoked major changes in education and government departments with the introduction of bicultural initiatives like the inclusion of Māori culture and te reo into the school curriculum. The efforts by Government were to move into policy making of biculturalism, inclusion and integration (Lourie, 2016). The establishment of Te Kohanga Reo (early childhood education ECE service) under the Education Act 1989 were total te reo immersion in the 1980s and the passing of the Māori Language Act 1987 which gave official recognition of te reo Māori being again an official language in Aotearoa (Lourie, 2016; May, 2023). The bicultural education policies were an answer to the educational underachievement of Māori students in mainstream schooling. The effect of these education initiatives is discussed by Lourie (2016), who highlights the significant increase in middle class Māori numbers; yet, other Māori still experienced poverty and hardship which continues today.

Socio-economic marginalization, territorial dispossession, health disparities and overall disadvantage seem to be the negative effects indigenous people suffered and continue to experience (Lavallee & Poole, 2010; Smallwood et al, 2021; Stewart et al, 2024). King et al (2017) discusses the Māori precariat which is a people that experience unsecured and

unliveable incomes and inadequate state support. Historically Māori participated in trade with settlers encouraged by some chiefs. Yet, after the signing of te tiriti colonisation policies and conflicts disrupted the security of the Māori economy, alienating and limiting Māori from their traditional economic resources through land confiscation, tenure, and waterway customary practice restrictions.

In 1975 Government passed the Treaty of Waitangi Act which established *The Waitangi Tribunal*, who were given the power to inquire into Māori claims related to te tiriti. In 1989 Te Tiriti o Waitangi settlement negotiations commenced with the Crown and iwi. The Crown acknowledged historical wrongs, offering apologies, and reaching settlements that involves compensation, land transfers. When settled this allows the Government having legal extinguishment of claims; permanently releasing or removing all legal rights, obligations, and liabilities arising from historical or present claims related to tiriti, ensuring that no further legal action can be taken (Crocker, 2014; Orange, 2021). Intergenerational effects from colonisation is well researched and documented, it is plain to see the negative outcomes experienced by indigenous populations that they still struggle with today. For Māori wellbeing the slow traumatic disintegration of their identity and cultural connection continues to have long lasting disharmony within Aotearoa (Thom & Grimes, 2022)

Fostering positive outcomes for Māori in a mainstream world is discussed by Nikora's (2007) research of Māori cultural connection to iwi and hapū between Māori in Aotearoa and in Hawai'i. Aotearoa participants felt being Māori was being a part of an adverse, disadvantaged minority group and both participant groups feel the presence of the dominant majority had come from a colonialist context. To counteract their perceptions engagement with in-group solidarity events and social justice was recommended, by changing their identity perception by Māori social groups through Crown settlements, tribal assets, having a sense of community and social cohesion (Nikora, 2007).

### 1.6 Social Cohesion & Neighbourhoods

The importance of social cohesion is described as society's ability to function with diverse groups' effectively, ensuring civic unity, reduction of inequality as well as socioeconomic disparities through inclusion, participation, belonging and recognition fostering cooperation and co-existence without sacrificing ethnic diversity (Cramm et al, 2013; Manca, 2014; Stephens et al, 2022). Spoonley et al (2020, p. 5) had a broad definition of social cohesion "as the presence of high levels of trust, a sense of belonging, a willingness to participate and help others, and policies that ensure social and economic inclusion". Choi and Matz-Costa (2018) argued that studies that researched perceived social cohesion by older persons had positive associations with psychological and physical wellbeing and negative associations with distress.

Research into neighbourhoods, social environments and mental health is a growing field. As older people tend to spend more time locally and in their residential settings being exposed to adverse neighbourhood conditions has been linked to directly and indirectly to the risk of depression (Baranyi et al, 2020). Neighbourhood quality is important for older people; the perception of their social environment has a strong influence on their wellbeing and reports of loneliness. Social interaction within the neighbourhood contributes to their quality of life; lower levels of trust because of security concerns due to crime in the neighbourhood has an influence being able to build neighbourhood relationships. Aspects of neighbourhood also play a part as poorer areas may be perceived as having limited services and low community maintenance can contribute to older person neighbourhood engagement (Stephens et al, 2022). Neighbourhood resources (local activities, services, shops, parks/ walks, stability in the neighbourhood etc) contribute to an older person's feelings of their social environment to be able to be participating locally and socially in the community yet with low neighbourhood resources they can feel isolated and lonely (Fisk, 2018; Stephens et al, 2022). Perceptions of

aging well for older people are connected to the importance of social engagement and neighbourhood facilities that are accessible for older people (Stephens & Bavarsad, 2025).

How positive perceptions influences behaviour enables relationship networking among like-minded people with similar values, supporting others such as neighbours builds and strengthens trust and solidarity (Choi & Matz-Costa, 2018). In Aotearoa the value of supportive neighbourhoods was evident in the 2011 Christchurch earthquakes. Neighbourhood support contributed to resilience within the community that assisted in the recovery. Neighbours provided information on accessing support services and checking in with older neighbours created social capital through these positive interactions (Statistics New Zealand, 2015). For older people social capital and being active in later life is a protective factor in maintaining positive wellbeing. Other factors to consider that enable cohesion are access to transport, liveable pensions and cultural diversity inclusion (Choi & Matz-Costa, 2018; Morgan et al, 2021). During the COVID pandemic Aotearoa's response was seen as a model for social cohesion, this was reflected in Morgan et al.'s (2022) research which found that Māori, Pacific, Korean and Chinese participants described increased feelings of inclusion and belongingness from the culturally-specific support they received.

### 1.7 Housing and Financial Stability

Accommodation tenure and residential permanency are factors that also contribute to social cohesion. It has also been found that there is a link between health outcomes and owning one's home when that is seen as the ideal in a society (Szabo et al, 2019). Tenure security was highlighted by Statistics New Zealand (2015) report showing that long-term residency is crucial for social integration, building support networks and also providing long-term renters and home-owners with life-control, freedom and permanency that also gives community involvement and responsibility. Furthermore, their report found that neighbours have an important role in people's health and wellbeing. If someone lived in a neighbourhood

six or more years they were twice as likely to have supportive neighbours and, due to close daily proximity, neighbours saw and conversed more than whānau and friends providing important social connection (Statistics New Zealand, 2015).

Māori had their highest level of homeownership in the 1930s (70.5 percent), but this fell especially when Māori began moving to the cities from their rural areas after World War II; homeownership in 2018 for Māori is at 47.2 percent (Statistics New Zealand, 2021). In Aotearoa, the need for housing stability is indeed a critical factor in maintaining and improving mental wellbeing. A stable residence provides a sense of safety, belonging, and the foundation for accessing other essential services. For the older population, Szabo et al. (2019) found there was a weaker negative impact of emotional loneliness for participants who owned their home than on renter participants, they found that homeownership is a protective factor against the negative effects of emotional loneliness in older people. For Māori housing deprivation is a major social determinant of health, and higher levels of deprivation correlate with poorer mental health outcomes (Baxter et al, 2006; Bennett & Liu, 2018).

Finally socio-economic status as an older-aged person is another important factor related to wellbeing. The decrease of quality of life that loneliness and depression causes is evident in research and the increase in physical health deterioration is a genuine risk to older adults experiencing economic difficulties and monetary status (Domènech-Abella et al, 2018; Sánchez-Moreno et al, 2024; Szabo et al, 2019). It is argued by Bennett and Liu (2018) that socio-economic disparities as well as other factors are a contributing factor and are intertwined with poorer mental health outcomes for Māori compared to the general Aotearoa population. Māori kaumātua, kuia and koro experience significant inequalities in socioeconomic status and wellbeing compared to their non-Māori counterparts and these disparities are linked to factors like lower incomes, less or no contribution to their retirement, poorer health, no medical insurance and lower homeownership (Apiti, 2020). Durie (1999)

suggested that socio-economic disparities is as important as cultural disconnection and alienation for indigenous kaumātua wellbeing.

### 1.8 Cultural Connection

The importance of social networks in relation to older person wellbeing is backed up by growing research evidence claiming that supportive relationships are vital for older people aging well (Stafford et al, 2003; Stephens & Bavarsad, 2025). Garcia Diaz et al (2019) discussed studies on loneliness and older ethnic minority persons, and suggested that it was the duty of the whānau to support them socially and emotionally. Familial support may reduce or counter feelings of isolation and loneliness, and this might influence why older ethnic minority people may not be interested in expanding their social network beyond the whānau.

For Māori kaumātua the importance of connection and social engagement is a paramount factor. Spoonley et al within an Aotearoa context describes “Māori, social cohesion speaks to the strength of the collective and a sense of identity and belonging (as Māori)” (2020, p. 5). To best overcome and prevent loneliness and depression among indigenous kaumātua, Parata (2023) argued that cultural connection, belonging within one’s culture, recovering cultural origins and identity is paramount to wellbeing. A Christchurch longitudinal study on mental health compared Māori with non-Māori, they reported that self-identifying Māori had 1.3 times more negative mental health outcomes than non-Māori (Parata, 2023). Muriwai et al (2015) proposed in their study that cultural connection could be a buffer to negative mental health outcomes. They found Māori with increased levels of cultural efficacy had higher rates of psychological resilience, those who solely identified as Māori with low rates of cultural efficacy had increased psychological distress, this supported their view of culture as a cure. Understanding the importance of cultural relationships for older kaumātua should be a guide

to learning how cultural expression and identity affect kaumātua loneliness (Garcia Diaz et al, 2019; Wright-St Clair et al, 2017).

### 1.9 Māori Centred Approach

A Māori-centred approach to older person's wellbeing seeks to empower individuals and communities by recognizing and nurturing their mana, while also addressing historical and systemic factors that may have eroded. Herbert (2001) suggests that the mainstream research approach is often rooted in Western paradigms; it differs from a Māori-centred approach significantly in its philosophy, methodology, and goals. It may involve Māori as participants, but the mono-cultural notions and Western ideologies do not prioritise Māori interests or cultural identity. Smith's (2021) transformative book on indigenous-led research, and particularly kaupapa Māori research approaches asserts that to be Māori is normal, to decolonise Western research, and produce positive outcomes that benefits indigenous communities.

The utilising of a Māori-centred approach prioritises Māori values, and cultural contexts throughout the research process, aims that align with their aspirations. A Māori-centred approach empowers Māori participants and communities to achieve collective improvements, it guides researchers towards ethical and cultural research practices and appropriate social science methods (Herbert, 2017). Durie (1996) highlights the importance of a holistic and culturally grounded approach to Māori development and well-being, emphasizing self-determination, cultural revitalization, and the interconnectedness of all aspects of life.

The emphasis on cultural themes all focuses on what a Māori centred approach is about, and what being Māori means for kaumātua. This approach is rooted in te ao Māori (the Māori worldview) and incorporates concepts such as mana, whakapapa, and tikanga. The promotion

of achieving better outcomes for Māori, advancing cultural revitalisation, and fostering a more equitable society, can be an explicit goal for Māori (Durie, 1996).

Using a framework and a cultural context that encapsulates the Māori centred concepts in research ensures ethical, appropriate, reliable and valid practice. Herbert et al's (2018, p. 598) research utilised "*tikanga* (protocols and practices) to guide research design and practice and is founded on three key principles: *whakapiki tangata* (empowerment of a person or people), *whakatuia* (interconnectedness) and *mana Māori* (Māori autonomy)" (Durie, 1997)

*Whakapiki tangata* is about supporting the empowerment of participants and their communities, by maintaining their dignity and the collective by being responsible, accountable and protective for them through the process (Forster, 2003). Durie (1997) refers to the *whakapiki tangata* principle as enhancement and enablement for Māori. It is a core concept in Māori centred research and practice, accenting positive outcomes and autonomy for Māori communities. This will be achieved through utilising the data in a transparent, safe and mana-enhancing manner that respects participant experiences, perspectives and responses. Findings from this research will resonate with a Māori emphasis on the importance of cultural identity, equipping readers to explore their own identity journey and share their unique identity narrative with others (Herbert, 2011).

*Whakatuia* is the importance to Māori of the interconnection between the environmental, physical and spiritual dimensions. Durie (1997) describes this in the context of the integration of different dimensions of wellbeing, particularly in the context of Māori health. It is a concept emphasizing a holistic approach that considers the interconnectedness of the physical, mental, spiritual, and family well-being integrated from a te ao Māori perspective. Connecting survey items to participant responses to identify valid, accurate results and interpretation analysis that reflects the *whakatuia* dimensions. The researcher critically

reflects on the data's significance, acknowledges the central role of participant contributions, and evaluates the research's broader implications for the community (Herbert, 2017).

*Mana Māori* is a central concept representing power, authority, prestige, and spiritual well-being. Durie (1997) discusses *mana Māori* as Māori control the process of research and protection of knowledge produced, ethical research practices honouring participant involvement, being careful not to cause shame or embarrass the participants even when unintended. To safeguard and mitigate any potential negative outcomes by employing kaupapa Māori principles, ensuring the process upholds and empowers mana Māori throughout (Herbert, 2017).

In outlining and summing up a Māori-centred approach as involving Māori in all aspects of research, from a Māori lense, to what matters to Māori, embedded in a Māori cultural context resulting in continued results for mātauranga Māori (Herbert, 2017). And for the researcher when conducting research by *Māori for Māori* that the processes are as honourable and valid as the outcomes (Smith, 2021).

### 1.10 Hypotheses and Research Questions

The aim of this research project is to explore the positive implications of having a strong cultural identity. Research indicates positive association between an individual's identity and mental wellbeing, and identity disconnection relates to increases in psychological mental distress such as anxiety and depression (Parata, 2023).

> *Hypothesis 1. Cultural identity is negatively correlated with psychological distress (emotional loneliness, depression and anxiety) among kaumātua.*

Kaumātua cultural identity is interconnected with neighbourhood and housing factors. Residential permanency, healthy neighbourhood ties, housing suitability and feeling secure, a

sense of belonging and access to local services build on Kaumātua resilience and positive wellbeing (Spoonley et al, 2020; Szabo et al, 2019).

*Hypothesis 2. Cultural identity is positively correlated with housing and neighbourhood support (social cohesion, tenure, housing satisfaction, neighbourhood safety, neighbourhood accessibility and housing stability).*

Adverse psychological effects are linked to poor local support networks, unstable accommodation tenure, and security concerns for Kaumātua (Baranyi et al, 2020; Stephens et al, 2022). Research suggests that older persons' perceptions of social cohesion are linked negatively with distress and positively linked to psychological and physical wellbeing (Choi & Matz-Costa, 2018).

*Hypothesis 3. Neighbourhood support and housing stability are related to emotional loneliness, depression, anxiety, and social cohesion.*

Cultural identity and social cohesion have common and similar characteristics that contribute to a positive Kaumātua wellbeing (Choi & Matz-Costa, 2018; Cramm et al, 2013; Spoonley et al., 2020; Stephens et al, 2022).

*Hypotheses 4. Cultural identity is positively correlated with neighbourhood social cohesion.*

Kaumātua with a robust cultural identity and a strong relationship and support system from their neighbourhood, as well as stable residential housing are less likely to experience psychological distress (Apiti, 2020; Baranyi et al, 2020; Parata, 2023; Szabo et al, 2019).

*Hypothesis 5. Cultural identity among Kaumātua moderates the relationships between neighbourhood supports and housing stability with emotional loneliness, depression and anxiety.*

# Chapter 2: Research Method

This research project analyzed surveyed data sourced from the 2020 and 2024 Health, Work and Retirement (HWR) study. The HWR longitudinal study commenced in 2006 and is administered by Massey University's Health and Ageing Research Team (HART). This section will detail demographic information of the participants, further information about the data source, collection process of survey data and ethical procedure approval, description of measures, and data analysis.

## 2.1 Participants

All participants were randomly chosen through the electoral roll to participant in the HWR study (Deobhakta, 2025). Due to the longitudinal nature of the HWR study participants who were part of the 2020 and the 2024 surveys were already part of the biennial survey, or they were newly recruited participants (meeting the criteria to participate in the survey). Participants that were excluded occurred when they had passed away, had moved overseas (relocation), withdrawn from study, or who were lost contact and had not participated or responded since 2014 (Parata, 2023).

The Health and Aging Research Team (HART) sent information letters to past participants inviting them to again participate in the survey and new participant cohorts explaining some more details about the survey. Participants that agree to participate are posted a survey to complete and can send their survey through a free-post envelope that is supplied to them.

Specifically for this research participants identifying as Māori in the 2020 and 2024 HWR cohort data were included. A steady state sampling recruitment design to ensure a non-Māori and Māori representation of those aged 55-65 years was used. The sample size required for Māori representation against Aotearoa's population size, the Dillman et al (2014) sample size calculation for population surveys was utilised and an oversampling size of 533 Maori

participants was an acceptable statistical representation size (Parata, 2023; Phillips, 2021). In the 2020 survey there were *N*= 4351 participants and 10 missing or excluded due to mismatch between previously recorded and reported demographic data: date of birth, gender. There were *N*= 1224 participants in the 2020 survey that self-identified as Māori from the existing cohort and 403 were new cohort Māori participants, total Maori participants *N*= 1627. And in the 2024 survey there were *N*= 2327 participants existing and new cohorts that self-identified themselves as Māori.

### 2.1.1 Gender

Table 1 shows gender for Māori self-identified participants in the 2024 survey were 971 (41.7%) were male/ Tane, 1,343 were female/ Wahine (57.7) and 2 identified as gender diverse with 11 missing a total of *N*= 2327.

### 2.1.2 Age

Age breakdown for self-identified Māori participants is indicated within certain age grouping shown.

Table 1 represents the various Māori participant ages from 55 years to 88 years, and 1 participant responding as 124 years of age with 21 missing participant responses. Table 7 show Māori participants aged between 55 to 65 years old 1167 (54.3 percent), 66 to 76 years old 741 (34.5 percent), and 77 to 88 years old 172 (8.0 percent).

### 2.1.3 Marital Status

The marital status of the Maori participants in the 2024 survey is also being used as a control variable.

Table 1 represents the marital status of Māori participants from the 2024 survey. It also shows that 1531 (65.8 percent) Maori participants responded that they were either married or

in a de facto relationship. It also shows that 770 (33.1 percent) Maori participants were not in marriage/ de facto relationship, 26 missing responses (1.1 percent).

**Table** 1

*Gender, Age and Marital Status Frequency Descriptions* [a]

| Variables | Frequency | Percentage |
|---|---|---|
| **Gender** | | |
| Tane/male | 971 | 41.7 |
| Wahine/female | 1,345 | 57.7 |
| Gender Diverse | 2 | 0.1 |
| Missing data | 11 | 0.5 |
| **Age Years Old** | | |
| 55-65 | 1167 | 54.3 |
| 66-76 | 741 | 34.5 |
| 77-88 | 172 | 8.0 |
| Missing/ unqualified | 70 | 3.2 |
| **Marital Status** | | |
| Married or defacto | 1531 | 65.8 |
| Not married or defacto | 770 | 33.1 |
| Missing data | 26 | 1.1 |

Note. Frequency is number of responses and the percentage

## 2.2 Procedure

### 2.2.1 Ethics

Research ethics were obtained by HART for the HWR studies for 2020 and 2024, they applied to the Massey Ethics committee and gained approval for three more years to continue their research (Apiti, 2020).

The researcher applied for data for analysis from the HART from certain sections of the 2020 HWR survey and 2024 survey. The researcher agreed to the terms and conditions outlined of the HART webpage in applying and utilising the data. Approval was gained and data file was sent to the researcher containing the necessary data required to analyze for the study. This was emailed to the researcher, and it was password protected, the researcher used the statistical software program: Statistical Package for the Social Sciences (SPSS) for data management, protection and analysis.

### 2.2.2 Cultural Ethnics

Specific important culturally ethical concerns are to be considered when selecting a Māori-Centered Approach. Essentially the idea of a Maori Centered Approach is the interconnection that it has with Maori principles and philosophy and the researcher's commitments to Maori (Herbert, 2011).

The researcher's role: as a Maori researcher it is my responsibility to tell through Matuaranga Māori, Tikanga as well as through good ethical research practices Maori health and wellbeing. The researcher's accountability and responsibility are to the Māori community to ensure the integrity of the data, mana of the participants and ensuring the study supports focused outcomes for Maori empowerment.

### 2.2.3 Data Collection

Procurement of data measures to analyze was sourced through gaining access to the 2024 Health, Work and Retirement survey managed by the Health and Ageing Research Team (HART). Requesting specific data was provided after agreeing to data access and conditions of use policy. The HWR survey began in 2006 it is a study of older adults 55 to 65 years of age who reside in Aotearoa, and were enrolled to vote were randomly selected (Parata, 2023). Its primary objectives were to gather relevant information on problems older adults are

experiencing (Allen et al, 2023). The study also provides a platform for participants to engage with international and national conversations on current important issues.

Information letters were posted to current and new participant cohorts explaining the survey and its importance, and they are invited to participate. If participants decide to participate in the survey, they are posted a survey to answer, and they can free post the survey back to HART. Participant's responded to survey questions by ticking appropriate box or boxes, or a text response could be given if required (Apiti, 2020)

Within the 2024 HWR survey there are seven sections; *Health and Wellbeing, Caregiving, Where You Live, Work and Retirement, Living Standards, Your Personal Situation, Māori Cultural Identity* (also used in this study was the HWR 2020 Māori Cultural Identity) that were relevant to this study. The 2024 Content Inventoryv_10 was utilised to identify the subsections and number of items for measures significant for measurement in this study.

# Chapter 3: Measures

## 3.1 Māori Cultural Identity

### 3.1.1 Māori Affiliation and Cultural Proficiency

Within the 2020 HWR study cultural identity was surveyed utilising the *Multidimensional Model of Māori Identity and Cultural Engagement* (Houkamau & Sibley, 2010). The MMMICE measure was used as a variable to evaluate its usefulness as a better cultural identity measure in this research. The second and third versions of the MMMICE introduced two more domains of analysis, the MMMICE2 added *perceived appearance* and MMMICE3 added *whānau efficacy* Matika et al (2020) reported that the addition of the perceived appearance measure was due to direct emails and participant responses to the MMMICE2. The MMMICE3 version is marked by the addition of whānau efficacy as a measure, due largely to the realisation that whānau being widely accepted and recognized as a primary source of Māori wellbeing and identity. The fully revised questionnaire was developed to evaluate different features of cultural engagement and Māori identity, this is done by assessing how Māori perceive the various domains of Māori culture as relevant to their own self-concept (Matika et al, 2020). The eight dimensions on cultural engagement and identity are, *Spirituality, perceived appearance, Cultural efficacy, Socio-political, Group membership evaluation, Whanau efficacy, Interdependent self-concept* and *Authenticity beliefs* (Houkamau et al, 2019).

The eight dimensions reflected confirmatory factor analysis, and it appears the eight domains of identity fit better than alternative factor structures, and each dimension has high internal reliability, represented by Cronbach's α coefficients (Matika et al, 2020). Of the eight dimensions, the 2020 HWR utilised six subscale dimensions of the MMM-ICE3, spirituality, perceived appearance, cultural efficacy and active identity engagement, socio-political, group membership evaluation, and Whanau efficacy. Only six dimensions were used from

MMMICE3 in the 2020 survey excluding the interdependent self-concept and authenticity beliefs. Scoring for participants for each item were 0 strongly disagree to 6 strongly agree.

For the present research only two dimensions of the MMM-ICE3 were used (group membership and cultural efficacy & identity engagement). These two dimensions were used in this research as cultural identity measures because they both had better reliability scores compared to the other dimensions utilised in the 2020 survey. The group membership dimension later renamed affiliation looks at the degree to which a person identifies as being Māori, and whether it is important to them or whether the negative extent of not being Māori is not important or irrelevant. Cultural efficacy & identity engagement dimension renamed as efficacy is the perception a person has (including with regards to resources and ability) to engage confidently with Māori culturally and socially or their perception of being able to engage confidently in the same contexts.

Testing the reliability of these measures using the 2020 HWR data showed that the Cronbach alpha scores of affiliation α .660, and efficacy α .660 this can be considered as having a moderate to acceptable reliability.

### 3.1.2 Cultural Embeddedness

In the HWR survey 2024 Māori cultural identity was measured by using the *Māori Cultural Embeddedness Scale* (MaCES) renamed as embeddedness. In the concept of cultural embeddedness it was originally developed to improve adaptive coping and wellbeing for Māori adolescents (Fox et al, 2018). Changing of the cultural identity measure from the MMM-ICE3 was due to consultation with participants on the appropriateness of the cultural identity scale for older Māori. Research from Fox et al (2018) provided the theoretical basis for the MaCES as a statistically robust tool. The cultural identity framework's focus is on

how people become integrated into their culture through values, beliefs, and practices as an attempt to reconcile differing views on Māori identity (Fox et al, 2018).

Nine items were modified from the theoretical framework that assesses older Māori adults in the survey. The modified items reflect the nature of how Maori identity is embedded. Item examples are *we should learn our whakapapa/history to strengthen our identity, kapahaka and other cultural arts are important ways that we can express ourselves as Maori* and *I know what my role is when helping at the marae.* Scoring for each of the items is either 1 strongly disagree, 4 neither agree nor disagree, and 7 strongly agree. The reliability for the embeddedness scale Cronbach alpha is α= .932 for nine items, which indicates an excellent reliability score.

### 3.1.3 Cultural Connectivity

The Te Hoe Nuku Roa research by Durie (1995) is a Māori-centered longitudinal study that examined more than 700 Māori households, attempting to understand diverse Māori realities. The study focused on Māori development in cultural, social, and economic terms over time and was the basis for establishing a framework to measure Māori identity and its relationship to wellbeing (Durie, 1995). One of the key components of the longitudinal study was the conception of cultural indicators which included *whakapapa* (ancestry), *marae attendance* (participation), *whānau* (association), *whenua* (land), *te reo ability* (proficiency in Māori language), and access to *mātauranga Māori* (Māori knowledge).

Items modified from Te Hoe Nuku Roa cultural indicators measured te reo ability (one item) firstly used in the 2020 survey, and marae attendance (two items) was introduced in the 2022 survey. The item asked respondents for perceived te reo ability: *how would you rate your overall ability with the Māori language?* Scoring for the te reo items in 2020 and 2024 was 1

was excellent, 2 was very good, 3 is good, 4 is fair, 5 was poor and 6 is none. This scoring was reversed so that the higher scores reflected higher te reo ability.

Marae participation and how often participants attended a marae, was investigated by the first item: *have you ever been to a marae*, and the second follow on item, *how often over the past 12 months* (this item was not used in the study). Scoring for the first marae item are 1 for yes and 2 for no and for the second item scoring ranges are from 1 not at all, 2 once, 3 a few times, 4 several times and 5 more than once a month. Te reo reliability score for the 2020 and 2024 items is Cronbach α .703 this score shows that it has good reliability as a measure. The present research explored the utility and validity of using these different Māori cultural identity measures.

### 3.2 Psychological Distress Variables

#### 3.2.1 Loneliness

The measure used the loneliness measure in the 2024 HWR study was a 6-item De Jong Gierveld Loneliness Scale, which is a reduced version of the 11-item scale (De Jong-Gierveld & van Tilburg, 2006). This scale assesses both social and emotional loneliness and scores provide an overall loneliness rating. Regarding social loneliness, the scale is designed to measure the absence of wider social networks and emotional loneliness because of feelings of missing an intimate relationship.

The measure of emotional loneliness used in this research consisted of three negative worded items. Examples of the negative items are *I experience a general sense of emptiness*, *I miss having people around me* and *I often feel rejected.* Scoring of the negatively worded items are 1 ‘yes’, 2 ‘more or less’ and 3 ‘no’, therefore lower scores indicate feeling emotionally lonely and when all item scores are totaled higher scores are considered as not being emotionally.

The range  of the Cronbach's alpha for loneliness for this research α= .823. This score indicates that it can be considered a very good measure for loneliness.

### 3.2.2 Depression

The Center for Epidemiological Studies Depression Scale CES-D10) is a widely utilised depression measure, it is a 10-item self-report scale designed to measure depressive symptoms in the general population. It assesses how frequently individuals experience various depressive symptoms over the prior week, using a four-point scale. The CESD-10 has been highly recommended as an excellent screening tool for depression with older participants (Blazer, 2009; Himmelfarb & Murrell, 1983; Park & Yu, 2021).

The CESD-10 scale consists of 10 items each with a four-point Likert scale with response options from 0-3. For most results, higher scores indicate more depressive symptoms. However, items 5 and 8 are reverse scored, meaning that a score of 3 on these items (most or all the time) is counted as 0, and a score of 0 is counted as 3. Any score above 10 indicates the presence of significant depressive symptoms (Zhang et al, 2012).

Item examples for depression are, *I was bothered by things that usually don't bother me*, *I felt depressed* and a reserve item *I felt hopeful about the future*. Response to items were: 1 'rarely or none of the time', 2 'some or a little of the time', 3 'occasionally or a moderate amount of the time', or 4 'all of the time'. The Cronbach alpha scores the scale's reliability as α= .841 which indicates it is likely a very reliable measure to use.

### 3.2.3 Anxiety

The reduced version of the Geriatric Anxiety Inventory (GAI-SF) is a brief five-item self-report measure. It is specifically designed to assess severity of anxiety in older adult situations or maybe in primary care, epidemiological studies or acute geriatric medical settings (Byrne & Pachana, 2011; Oliveira et al, 2016).

The GAI-SF scale asks five-items with agree or disagree responses, ‘agree’ has a 1 score and ‘disagree’ has 0 with a cutoff score of 3 or more indicating high specificity (87%) and sensitivity (75%) (Byrne & Pachana, 2011). Byrne & Pachana (2011) development research on the GAI-SF scale established for optimal detection of generalised anxiety disorder in an older population a score of 3 or greater cutoff is advised. The Cronbach alpha for the anxiety scale is α= .843 indicates a very good measure for anxiety in older people.

Examples of the scale’s items are, *I worry a lot of the time, I think of myself as a worrier* and *My own thoughts often make me nervous*.

### 3.3 Neighbourhood Variables

#### 3.3.1 Social Cohesion

Table 2 above indicates that 2253 participants had responded to the social cohesion subscale in this study with a mean score of 3.43 and a standard deviation of .503 variance.

The social cohesion subscale used in the 2024 HWR survey is a six-item measure (Aotearoa index version) developed from research by Stafford et al (2003). Stephens et al (2022) describes the subscale as a measuring tool that distinguishes four elements that reflect qualities of community interaction. The four elements measured are neighbourhood attachment (four items about feeling a part of the area), practical assistance (three items regarding being comfortable to ask for money or trust); an item example is *Most people in this area can be trusted*. Respect or tolerance is measured with six items evaluating respectful treatment between neighbours in the area and an item example is *People in this area would do something is a house was broken into.* Item results are measured with on a Likert style 5-point scale from 1 ‘strongly disagree’, 3 ‘neutral’ to ‘strongly agree’ is 5. A combined index of social cohesion is achieved through the total summed scores. The Cronbach alpha for reliability is α= .814 which suggests that the social cohesion scale is a very good measure.

**Table** 2

*Neighbourhood Descriptive Statistics*

| | ***N*** | **Mean** | **Std. Deviation** |
|---|---|---|---|
| Satisfaction | 2301 | 4.38 | .955 |
| Accessibility | 2281 | 4.49 | .798 |
| Social Cohesion | 2253 | 3.43 | .503 |
| Environmental | 2201 | 2.38 | .466 |
| Safety | 2286 | 4.56 | .703 |
| Valid N (listwise) | 2127 | | |

Note. *N* is the number of participants that responded to the subscales

### 3.3.2 Safety

Table 2 data reports that 2286 participants responded to the subscale with a mean score of 4.56, and a standard deviation of .703 variance.

Buckenberger's (2012) subscale measurement for 'neighbourhood safety' (renamed for this research as 'safety') guided the creation of four declaration items. Safety, especially as perceived by older adults in the context of or specific to housing situations, is a significant factor in housing preferences and reported residential satisfaction. 'Safety' data has often been linked to perceptions of neighbourhood quality, mobility and wellbeing (Buckenberger, 2012).

The scale includes four declarations including *The neighbourhood is peaceful,* and *I feel safe in my neighbourhood*. The measure uses a five-point Likert scale, 1 'No definitely not', 3 'Neutral' and 5 'Yes definitely', and the scores are summed together. Reliability for the measure is identified through Cronbach alpha which is α= .847, which indicates a very good reliability measure.

### 3.3.3 Environmental

Table 2 data shows that 2201 participants responded to this subscale with a mean score of 2.38 and a standard deviation of .466 variance.

Feng et al's (2018) research focused on the development of age friendly urban environments (housing quality, access to recreation, health services and efficient transportation) aimed at promoting life satisfaction and wellbeing for older persons.

The neighbourhood environmental qualities subscale (renamed environmental) used a 9 item assessment tool in the 2024 HWR survey, adapted from Feng et al's (2018) research. Item examples are *People park legally around my neighbourhood, It is convenient to see a doctor, There is adequate night lighting in the neighbourhood,* and *It is convenient to catch the bus.* Responses to the measurement are 1 'No, definitely not', 2 'Neutral' or 3 'Yes, definitely', the Cronbach alpha is α= .83 which indicates that this measure has very good reliability.

### 3.3.4 Accessibility

Table 2 reports that 2281 participants responded to the subscale with a mean score of 4.49 and a standard deviation of .798 variance

Assessing 'neighbourhood accessibility'(renamed 'accessibility') looks at access to facilities that are important to older people. The perception of accessibility to community environments and services is linked to aging well, good mental health and quality of life (Stephens et al, 2022).

The subscale has three items that are, *I can get to the shops easily, I am close to any help I need,* and *I am close enough to important facilities.* Score rating is through a five-point Likert scale from 1 'No, definitely not' to 5 'Yes definitely', and a summed score range of 3-15. Reliability for this scale using Cronbach alpha score is α= .830, this shows the subscale is likely a good measure for neighbourhood accessibility.

### 3.3.5 Satisfaction

Table 2 shows that 2301 participants responded to this subscale item with a mean score of 4.38 and a standard deviation of .955 variance.

Oswald et al.'s research suggested older people exhibit high residential stability, a strong attachment to their home and neighbourhood (2006), measuring the participant's perception of how the environment may be more important for their sense wellbeing.

'Neighbourhood satisfaction' (renamed 'satisfaction') was measured through a single item *I am satisfied with my neighbourhood.* A reliability score for satisfaction is not possible because Cronbach's alpha score requires multiple items.

## 3.4 Housing Variables

### 3.4.1 Housing Satisfaction

Table 3 data that 2195 participants responded to the housing satisfaction subscale with a mean score of 22.00 and a standard deviation of 3.19 variance.

Two scales were used to measure 'housing satisfaction' (renamed 'house satisfaction') in the 2024 survey, eight items were drawn from Oswald et al (2006) and Heywood et al's research (2002) on housing satisfaction. One measure evaluates how well a dwelling, and its environment have been perceived as having met residents' needs and contributes to their well-being. This is done by relating between the actual and desired living conditions, functionality, usability, and psycho-social aspects (Heywood et al, 2002). The other measure referred to housing satisfaction as a person's perceived housing experience that should be considered alongside meaning of home, usability in the home, and housing-related control beliefs (Oswald et al, 2006).

Item examples of quality of the housing are, *I am able to keep my house warm*, social provisions: *My house enables me to see friends and family as often as I like* and general satisfaction. Responses to the items range through 1 'No, definitely not', 3 'Neutral', and 5 'Yes, definitely'. Reliability for the measure is assessed through the Cronhbach Alpha α= 0.828, this means that the subscale has very good reliability.

**Table** 3

*House Satisfaction Descriptive Statistics*

| | N | Mean | Std. Deviation |
|---|---|---|---|
| House Satisfaction | 2195 | 22.00 | 3.19 |
| Valid N (listwise) | 2195 | | |

Note. *N* is number of participants that responded to subscale

### 3.4.2 Housing Stability

Table 4 that 2240 participants responded to the housing satisfaction subscale with a mean score of 4.38 and a standard deviation of 3.19. Housing stability was measured using a single item assessing length of residence: *How long have you lived in your present home -Years* and *– Months.* Table 4 also indicates the minimum and maximum range was 00 to 69 years

**Table** 4

*Stability (TotalYears) Descriptive Statistics*

| | |
|---|---|
| Mean | 15.21 |
| Median | 11.25 |
| Std Deviation | 12.97 |
| Range | 69.00 |
| Minimum | .00 |
| Maximum | 69.00 |
| *n* Valid | 2321 |
| Missing | 6 |

Note. *n* is number of participants that responded to subscale

### 3.5 Control Variables

#### 3.5.1 Socioeconomic Status (SES)

The short version of Living Standards Capabilities for Elders(LSCAPE; (Breheny et al, 2016) was used to assess SES. LSCAPE is a framework designed to assess key domains of living standards. The focus of SES is at both ends of the economic spectrum, from the upper-end of living standards (financial freedom) to the lower-end deprivation (affording healthy food). It is founded in a capability perspective to economic wellbeing, attaining standards of living that are important to older adults' functioning and the freedom to achieve them (Breheny et al, 2016). There are six domain measures, *Contribution*; participating and contributing to their community and society, *Security;* feeling safe and secure in one's environment and personal circumstances. *Enjoyment;* ability to experience pleasure and life satisfaction, *Autonomy/ Restriction;* ability to have control over one's life verses the

restrictions one faces. *Social integration:* ability to connect with others and maintain social relationships, and *Health;* ability to maintain and access good health (Breheny et al, 2016).

Examples of the SES items are *I can afford to go to a medical specialist if I need to, My choices are limited by money,* and *I am able to give to others as much as I want*. The Cronbach's alpha reliability coefficient is α= .850 meaning this scale has very good reliability. Age, Marital Status, and Gender were also used as control variables (see Table 1).

Table 5 shows that 2270 responded to the LSCAPE subscale , the mean is 19.83 with a standard deviation of 6.30 variance.

**Table** 5

*LSCAPE 2024 Descriptive Statistics*

| | ***n*** | **Mean** | **Std Deviation** |
|---|---|---|---|
| Older Living Standards (Short Form) 2024 | 2270 | 19.83 | 6.30 |
| Valid *n* (listwise) | 2270 | | |

Note. *n* is number of participants that responded to subscale

### 3.5.2 Data Analysis

The Statistical Package for the Social Sciences (SPSS) software version V31.0.2.0 was used for data management and analysis. The SPSS program is available for Massey students as an academic resource through the Massey student portal.

Measures that were used in this study were first analysed for response frequency for each item in order to establish the number of valid cases and identify any missing cases for the dataset. Then reversed items (questions worded opposite to the general trend) were transformed, (the numerical scores of reversed items are changed to align with positively worded items) so each measure's reliability could be calculated. Descriptive statistics tables

were completed below then means and standard deviations outputs for each of the measures were also determined.

Multiple Regression analysis was undertaken by the researcher to analyse how the independent variables (predictor) influences a dependent variable (outcome).

Regression analysis is a tool for inference and prediction, so correlating the variables (measures) in this study was to identify and verify if changes in the predictor relate to changes in the outcome. The SPSS calculation determines whether there is a statistical significance (p-values) in the data generating outputs for interpretation. This process quantifies relationships and helps to identify what factors matter the most and make better predictions across the data.

### 3.5.3 Moderating Analysis

A hierarchical multiple regression (HRM) analysis was employed to address the hypothesis question five; cultural identity among Kaumātua moderates the relationships between neighbourhood supports and housing stability with emotional loneliness, depression and anxiety affecting responses. Hierarchical multiple regression is a sequential statistical technique, used to assess the predictive power of independent variables on a dependent variable (Pallant, 2020). The analysis is conducted by entering the variables in blocks, based on theoretical, rather than statistical grounds. This means that independent variables with the dependent variable are entered in sequential steps (blocks) into the SPSS program. To analyse whether cultural identity moderates the relationship between neighbourhood and housing supports with mental health, interaction variables were created. The interaction variables neighbourhood, housing and cultural identity variables were centered to reduce assumption issues of high and extreme multicollinearity, improve accuracy of the coefficients (main effects) and increase the stability of the estimates (Astivia & Kroc, 2019). The centering

process of subtracting the mean of itself from each variable, making the variable mean zero, creates zscores. The cultural identity measure from 2024 (MaCES) was multiplied by housing stability, housing satisfaction, neighbourhood satisfaction, neighbourhood cohesion, neighbourhood safety, neighbourhood accessibility, and neighbourhood environment zscores to create the interaction variables.

When testing the interaction variables the MMMICE-3 interaction variables had none to very low effect; this might be due to missing data and the low responses to the MMMICE-3 measures in 2020. To address this issue, it was decided to only utilise the MaCES cultural identity measure in the hierarchical multi-regression analysis.

The variables were then entered in a step-by-step process (Pallant, 2020) into three hierarchical regression equations for each dependent variables (depression, emotional loneliness and anxiety). At step one of each equation, the control variables, SES, age, and marital status were entered. At step two, the cultural identity variable with the neighbourhood and housing support variables were entered and at step three the interaction (moderator) variables were entered.

SPSS outputs of the residuals of the three multiple regressions were interpreted, and the assumptions were checked for any concerns. Firstly, the assumption of non-multicollinearity was satisfied as the values of tolerance for all variables were higher than 0.10, and the VIF values were less than 10 (Pallant, 2020). The assumptions of the outliners and normality were checked, and they were satisfied by observing the normal P-P plot, scatterplot and checking Mahalanobis distance scores (Tabachnick & Fidell, 2013).

# Chapter 4: Results

## 4.1 Comparing Cultural Identity Measures

The revised Multidimensional Model of Māori Identity and Cultural Engagement (MMM-ICE3) and the embeddedness scale (MaCES) and are relatively new self-report measures for aspects of Māori identity differing in their theoretical approach and specific focus, and were used to measure Maori cultural identity in this research.

This measure aims to reflect the diverse realities of an interconnection of identity and engagement in the Māori population. The focus of the MMMICE3 scale is to measure the respondent's perceptions of where they are placed within each of the subscale's dimensions. The revised subscale, adapted measures for traditional concepts of Māori identity found the subscales indicated having internal reliability and reasonable model of fit from the confirmatory factor analysis (Matika et al, 2020).

Table 7 shows that there are many missing responses from the 2020 HWR survey, this can diminish statistical power, introduce bias, and reduce the generalizability of findings (Ranganathan & Hunsberger, 2024).

**Table** 6

*MMMICE3 Frequency Descriptions*

| | MMMICE3 Group Membership Evaluation 2020 | MMMICE3 Cultural Efficacy and Active Identity Engagement 2020 | MMMICE3 Spirituality 2020 | MMMICE3Socio-political Consciousness 2020 | MMMICE3Whanau Efficacy 2020 |
|---|---|---|---|---|---|
| *n* Valid | 496 | 705 | 395 | 491 | 688 |
| Missing | 1831 | 1622 | 1932 | 1836 | 1639 |

Note. *n* is the number of responses and missing responses

Table 7 shows the Māori Cultural Embeddedness Scale (MaCES) 2024 items and indicates firstly that the measure had more valid responses compared to the MMM-ICE3 2020. The MaCES assesses the extent to which an individual integrates into their everyday lives their beliefs, core values and Māori cultural practices (Fox et al, 2023).

**Table** 7

*Embeddedness Frequency Descriptions*

| | We should learn our Whakapapa/ history to strengthen our identity | Relationships should be nourished and maintained | Because we whakapapa (relate) to the natural environment around us, it is our duty to care and protect it | Te Reo Māori (Māori Language) helps deepen cultural understanding | Kapa haka and other cultural arts are important ways we can express ourselves as Māori | I know what my role is when helping at the Marae | Māori stories, myths and legends are relevant today | I believe our tupuna (ancestors) can guide us in life | Wairuatanga Maori (spirituality) is an important aspect of life |
|---|---|---|---|---|---|---|---|---|---|
| *N* Valid | 2275 | 2262 | 2271 | 2267 | 2267 | 2235 | 2263 | 2258 | 2260 |
| Missing | 52 | 65 | 56 | 60 | 60 | 92 | 64 | 69 | 67 |

Note. *n* is the number of responses and missing responses

Table 8 shows that each of the cultural identity measures have a significantly weak correlation with each other, ($r$= .40 $p$= < .01, and $r$= .40 $p$= < .01 respectively). This suggests that each measure is measuring different cultural identity concepts. The main difference between both cultural identity measures highlights what they purport to be measuring. The MMM-ICE3 indicates how the individual perceives their cultural identity, whereas the MaCES focuses is on everyday life engagement with cultural aspects self-reported by the individual (Serdar et al, 2021).

**Table** 8

*MaCES and MMMICE3 Correlation*

| | Embeddedness | Affiliation | Proficiency |
|---|---|---|---|
| Embeddedness | 1 | | |
| Affiliation | .40** | 1 | |
| Proficiency | .40** | .50** | 1 |

**. p<.001 (2 tailed).

Table 9 shows that the marae and te reo 2024 items had a higher response rate from participants than the 2020 item. The high missing responses for TeReo20 item are constant with the MMMICE3 cultural identity subscales proficiency and affiliation.

**Table** 9

*MMMICE3, MaCES, Marae, TeReo20 and TeReo20 Correlation*

| | Affiliation | Proficiency | Embeddedness | Marae | Te Reo20 |
|---|---|---|---|---|---|
| Affiliation | 1 | | | | |
| Proficiency | .50*** | 1 | | | |
| Embeddedness | .40*** | .40*** | 1 | | |
| Marae | .29*** | .43*** | .39*** | 1 | |
| TeReo20 | -.32*** | -.58*** | -.25*** | -.33*** | 1 |
| TeReo24 | -.23*** | -.44*** | -.36*** | -.47*** | .54*** |

*** Correlation at 0.0001 (2-tailed)

## 4.2 Hypothesis Testing

### 4.2.1 Hypothesis one.

Cultural identity is negatively correlated with psychological distress among Kaumātua.

Table 10 below shows that the measures of cultural identity (affiliation, proficiency, TeReo20, embeddedness, Marae and TeReo24) are not significantly related to depression, anxiety or emotional loneliness.

Hypothesis one is not supported as indicated by the data in table 10 which shows that there is no relationship between any of the measures of cultural identity and psychological distress. However, depression and proficiency did indicate a significant negative relationship at the 0.01 level.

Table 10 shows that the Pearson correlation coefficients indicate that the marae measure has a positive correlation with the MMMICE3 subscales affiliation and proficiency, embeddedness, TeReo20 and TeReo24. The affiliation subscale ($r$= .29 $p$= < .01), embeddedness ($r$= .39 $p$= < .01) a weak positive relationship and te reo20 ($r$= .33 $p$= < .01). Proficiency ($r$= 0.40 $p$= < .01) had the strongest weak-moderate relationship. Te reo20 measure has weak relationships with affiliation ($r$= .32 $p$= < .01), embeddedness ($r$= .25 $p$= < .01), and a moderate relationship with proficiency ($r$= .58 $p$= < .01) and TeReo24 ($r$= 0.40 $p$= < .01). Te reo24 measure has a weak relationship with affiliation ($r$= .23 $p$= < .01), embeddedness ($r$=.36 $p$= < .01), and a weak to moderate relationship with proficiency ($r$= .44 $p$= < .01).

**Table** 10

*Pearson's r coefficients showing bivariate correlations*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Proficiency | 1 | | | | | | | | | | | | | | | | | | | |
| 2. Affiliation | .50** | 1 | | | | | | | | | | | | | | | | | | |
| 3. Embeddedness | .40** | .40** | 1 | | | | | | | | | | | | | | | | | |
| 4. Marae | .43** | .29** | .39** | 1 | | | | | | | | | | | | | | | | |
| 5. Te Reo20 | -.58** | -.32** | -.25** | -.33** | 1 | | | | | | | | | | | | | | | |
| 6. Te Reo24 | -.44** | -.23** | -.36** | -.47** | .54 | 1 | | | | | | | | | | | | | | |
| 7. Depression | -.04** | .02 | .02 | .02 | .03 | -.03 | 1 | | | | | | | | | | | | | |
| 8. Anxiety | .02 | -.04 | .01 | .02 | -.03 | .01 | -.52 | 1 | | | | | | | | | | | | |
| 9. Loneliness | .004 | .03 | -.01 | 01 | -.01 | -.03 | .48** | -.47** | 1 | | | | | | | | | | | |
| 10. Social Cohesion | .12** | .002 | .13** | .06** | -.11** | -.05* | -.06** | .04 | -.08** | 1 | | | | | | | | | | |
| 11. Safety | .01 | .02 | 06** | .01 | .03 | .01 | -.25** | .24** | -.26** | .25** | 1 | | | | | | | | | |
| 12. Environmental | .02 | -.05 | .06** | -.03 | -.02 | -.01 | -.14** | .12** | -.17** | .15** | .24** | 1 | | | | | | | | |
| 13. Satisfaction | .03 | .07 | .07** | .01 | .01 | .02 | -.19** | .12** | -.17** | .27** | .63** | .19** | 1 | | | | | | | |
| 14. Accessibility | .03 | -.01 | .05** | -.02 | .02 | .06** | -.26** | .19** | -.24** | .15** | .42** | .59** | .33** | 1 | | | | | | |
| 15 H-Satisfaction | .002 | -.003 | -.02 | .01 | .02 | -.05* | -.22** | -.22** | -.24** | .20** | .40** | .32** | .24** | .16** | 1 | | | | | |
| 16. SES | .01 | .01 | .01 | .01 | .02 | -.04 | -.25** | .23** | -.25** | .17** | .30** | .21** | .23** | .27** | .32** | 1 | | | | |
| 17. Stability | .08* | .01 | -.01 | .04 | -.05 | -.01 | -.02 | .01 | -.04 | .03 | .02 | -.02 | .004 | .02 | .10** | .07** | 1 | | | |
| 18. Age | .05 | -.03 | -.03 | -.02 | -.01 | .03 | -.05* | -.11** | -.05* | .15** | .09** | .06** | .09** | .02 | .07** | .20** | .17** | 1 | | |
| 19. Gender | .05 | .02 | .17** | .05* | -.004 | -.10** | .04 | -.07** | .02 | .07** | -.02 | .003 | .03 | .01 | .000 | -.01 | .06** | -.02 | 1 | |
| 20. Marital status | .03 | -.01 | .08** | .04 | -.02 | -.08** | .14** | -.10** | .18** | -.06** | -.16** | .000 | -.12** | -.06** | -.17** | 15** | -.08**-. | .07** | .10** | 1 |

1*. p<.05 (2-tailed). **. p<.001 (2-tailed); H-Housing Satisfaction

### 4.2.2 Hypothesis two:

Cultural identity is positively correlated with housing and neighbourhood support.

Correlations in table 11 indicated that there were positive relationships and a negative relationship between the measures.

Table 10 shows that social cohesion and proficiency ($r$= .12** $p$= <.001, $n$= 680), embeddedness ($r$= .13** $p$= <.001, $n$= 2203 and Marae ($r$= .06** $p$= .005, $n$= 2132) have a weak positive correlation. Similarly, social cohesion is negatively related to TeReo24 ($r$= -.05* $p$= .015, $n$= 2216). Environmental have a weak positive correlation with embeddedness ($r$= -.06** $p$= .007, $n$= 2151) only. Similarly, satisfaction is correlated only with embeddedness ($r$= .07** $p$= <.001, $n$= 2243). Safety, accessibility, housing satisfaction and stability are not correlated with any of the cultural identity measures.

Hypothesis two is supported by the relationships between neighbourhood social cohesion and proficiency, embeddedness, Marae, TeReo20 and TeReo24. The stronger the aspects of cultural identity are assessed, the higher the sense of cohesion among neighbours. This trend is also partially supported by the relationships to embeddedness and a positive assessment of environmental and satisfaction. Those who report greater embeddedness are more likely to express more satisfaction with the qualities of their neighbourhood.

### 4.2.3 Hypothesis three:

Neighbourhood supports and housing stability are related to emotional loneliness, depression, anxiety, and social cohesion.

Table 10 results indicated positive and negative relationships between the neighbourhood and housing supports with psychological distress measures.

The responses analysed in table 10 show that safety and depression (*r*= -.25** *p*= <.001, *n*= 2182) and loneliness (*r*= -.26** *p*= <.001, *n*= 2259) have a weak negative correlation. Similarly, safety with anxiety (*r*= .24** *p*= <.001, *n*= 2252), and social cohesion (*r*= .25** *p*= <.001, *n*= 2229) have a weak positive relationship.

The measures of environmental and depression (*r*= -.14** *p*= <.001, *n*= 2190) and loneliness (*r*= -.17** *p*= <.001, *n*= 2178) are weak and negatively correlated. Similarly, when environmental is considered with anxiety (*r*= .12** *p*= <.001, *n*= 2171), and with social cohesion (*r*= .15** *p*= <.001, *n*= 2240) a weak, positive relationship is established.

Satisfaction when correlated with depression (*r*= -.19** *p*= <.001, *n*= 2193), anxiety (*r*= -12** *p*= <.001, *n*= 2264), and loneliness (*r*= -.17** *p*= <.001, *n*= 2272) shows a weak negative correlation. Satisfaction and social cohesion (*r*= .27** *p*= <.001, *n*= 2240) indicate a weak, positive relationship.

Analysis of accessibility and depression (*r*= -.26** *p*= <.001, *n*= 2171) and loneliness (*r*= -.24** *p*= <.001, *n*= 2253) shows a weak negative correlation. Similarly, accessibility with anxiety (*r*= .19** *p*= <.001, *n*= 2243), and social cohesion (*r*= .15** *p*= <.001, *n*= 2227) indicate a weak positive relationship. Stability is not correlated with depression, anxiety, emotional loneliness or social cohesion.

Hypothesis three is supported by the relationships between neighbourhood supports and psychological distress variables. Safety, environmental, accessibility and satisfaction indicate a negative relationship with loneliness and depression, only satisfaction has a negative relationship with anxiety. This means a lower sense of neighbourhood supports relates to increased feelings of depression, and emotional loneliness, as well as with satisfaction with anxiety, and neighbourhood supports indicated a positive relationship with social cohesion

except not with satisfaction. This indicates an increased sense of neighbourhood support and showed increased positive perception with social cohesion.

### 4.2.4 Hypotheses four:

Cultural identity is positively correlated with social cohesion.

Most cultural identity measures were correlated with social cohesion in table 10.

Table 10 shows that when social cohesion is analysed with proficiency ($r$= .124** $p$= <.001, $n$= 680), embeddedness ($r$= .13** $p$= <.001, $n$= 2203) Marae visits ($r$= .06** $p$= .005, $n$= 2132), Te Reo20 ($r$= -.11** $p$= .003, $n$= 805) and Te Reo24 correlation ($r$= -.05* $p$= .015, $n$= 2216) there is a weak positive correlation.

Hypothesis four is supported by the correlations between social cohesion and cultural identity variables (proficiency, embeddedness, te reo, and marae). Having a strong cultural identity is positively linked to social cohesion, indicating participants seemed to have positive perceptions of neighbourhood integration and relationships.

### 4.2.5 Hypothesis five:

Hierarchical multiple regression was used to assess the ability of cultural identity and neighbourhood and housing variables (embeddedness, social cohesion, neighbourhood safety, environmental qualities, satisfaction, accessibility and housing satisfaction and stability and their interaction variables to each other) to predict levels of depression, after controlling for the influence of standard of living (SES), marital status and age.

Table 11 shows that standard of living (SES), marital status and age were entered at Step 1, explaining 7% of the variance in depression. After entering cultural identity, neighbourhood and housing support variables at Step 2 the total variance explained by the model as a whole was 13%, $F$ (11, 2045) = 27.87, $p$ < .001. The three control measures explained an additional

6% of the variance for emotional loneliness after controlling for age, marital status and SES. The R squared change = .06, *F* change (8, 2045) = 16.84, *p* <.001. In Step 2, the measures of neighbourhood safety, accessibility and housing satisfaction were statistically significant, with accessibility recording a higher semi partial correlation (*sr* = -.14, p < .01) than housing satisfaction (*sr* = .08, *p* < .01) or neighbourhood safety (*sr* = -.07, *p* < .01). At Step 3, interaction variables between cultural identity, neighbourhood and housing support variables were entered. The total variance explained by Step 3 as a whole was 13%, *F* (18, 2038) = 17.28, *p* < .001. These interactions explained only an additional 0.002% of the variance in depression and no interaction between measures was statistically significant (*p*'s > .05).

**Table** 11

*Summary of Hierarchical Regression analysis for variables predicting depression*

| **Step and predictor variable** | ***B*** | **SE *B*** | **Beta** | ***sr*** | **Change in $R^2$** | **Adj. $R^2$** |
|---|---|---|---|---|---|---|
| Step1 | | | | | .07*** | .07 |
| Constant | 2.32 | .08 | | | | |
| SES | -.08 | .01 | -.23*** | -.23 | | |
| Age | -.002 | .001 | -.04 | -.04 | | |
| Marital Status | .08 | .02 | .10*** | .11 | | |
| | | | | | | |
| Step2 | | | | | .06*** | .13 |
| Constant | 2.90 | .11 | | | | |
| SES | -.10 | .01 | -.14*** | -.13 | | |
| Age | -.001 | .001 | -.02 | .02 | | |
| Marital Status | .06 | .02 | .02*** | .08 | | |
| Embeddedness | .001 | .001 | .04 | .02 | | |
| Social Cohesion | .03 | .02 | -.04 | .04 | | |
| Neigh Safety | -.05 | .02 | .09** | -.07 | | |
| Environment | .002 | .02 | .003 | .003 | | |
| Neigh Satisfaction | -.007 | .01 | -.02 | .01 | | |
| Accessibility | -.08 | .01 | -.20*** | -.14 | | |
| Housing Sat | -.01 | .003 | -.09*** | .08 | | |
| Stability | .000 | .001 | -.004 | -.01 | | |
| | | | | | | |
| Step 3 | | | | | .002 | .13 |
| Constant | 2.9 | .12 | | | | |
| Age | -.001 | .001 | -.02 | -.02 | | |
| Marital Status | .06 | .02 | .08*** | .08 | | |
| SES | -.05 | .01 | -.14*** | -.13 | | |
| Embeddedness | .000 | .001 | -.01 | -.003 | | |
| Social Cohesion | .03 | .02 | .04 | .04 | | |
| Neigh Safety | -.05 | .02 | -.09 | -.07 | | |
| Environment | .002 | .02 | .002 | .002 | | |
| Neigh Satisfaction | -.01 | .01 | -.02 | -.02 | | |
| Accessibility | -.08 | .01 | -.16*** | -.14 | | |
| Housing Sat | -.01 | .003 | -.09*** | -.08 | | |
| Stability | .000 | .001 | -.01 | -.01 | | |
| Safety*-MaCES | .01 | .01 | .03 | .02 | | |
| Stability*-MaCES | .000 | .001 | .03 | .02 | | |
| Social-Coh*-MaCES | .01 | .01 | -.03 | .-03 | | |
| Satis*-MaCES | .001 | .01 | .003 | .003 | | |
| Access*-MaCES | -.01 | .01 | -.02 | -.02 | | |
| Enviro*-MaCES | .01 | .01 | .03 | .02 | | |
| Hou-Sat*-MaCES | -.01 | .01 | -.01 | -.01 | | |

Note *sr* = semi partial correlation coefficient; *p<.05; **p<.01; ***p<.001

Hierarchical multiple regression was used to assess the ability of (MaCES, social cohesion, neighbourhood safety, environmental qualities, satisfaction, accessibility and housing satisfaction and stability and their interaction to each other) to predict levels of loneliness (emotional loneliness) after controlling for the influence of SES, marital status and age.

Table 12 shows that standard of living (SES), marital status and age were entered at Step 1, explaining 8% of the variance in emotional loneliness. After entering cultural identity, neighbourhood and housing support variables at Step 2 the total variance explained by the model as a whole was 14%, $F$ (11, 2045) = 29.86, $p < .001$. The three control measures explained an additional 6% of the variance in emotional loneliness after controlling for age, marital status and SES, R squared change = .06, $F$ change (8, 2045) = 16.69, $p <.001$. In Step 2, the measures of neighbourhood safety, accessibility and housing satisfaction were statistically significant, with neighbourhood safety recording a higher semi partial correlation value ($sr$ = .04, $p < .001$) than accessibility ($sr$ = -03, $p < .001$) and housing satisfaction ($sr$ = .01, $p < .001$).

At Step 3, interaction variables between cultural identity, neighbourhood and housing support variables were entered. The total variance explained by Step 3 as a whole was 15%, $F$ (18, 2038) = 19.44, $p < .001$. These interactions explained an additional 0.008% of the variance in emotional loneliness after controlling for all measures in Step 1 and 2, R squared change = .008, $F$ change (8, 2038) = 2.79, $p<.01$. In Step 3, the only significant interaction was between stability and cultural identity, with a semi partial correlation value of .05 ($p < .05$).

**Table** 12

*Summary of Hierarchical Regression analysis for variables predicting loneliness*

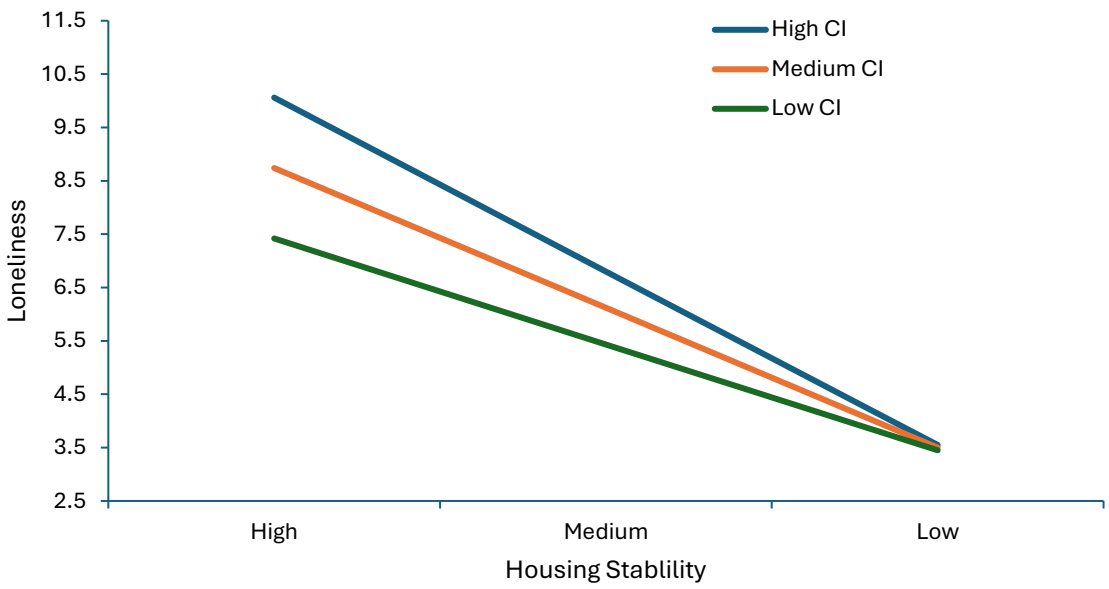
| Step and predictor variable | *B* | SE *B* | Beta | *sr* | Change in $R^2$ | Adj. $R^2$ |
|---|---|---|---|---|---|---|
| Step 1 | | | | | .08*** | .08 |
| Constant | 1.50 | .21 | | | | |
| SES | -.20 | .02 | -.04*** | -.22 | | |
| Age | -.01 | .003 | -.04* | -.05 | | |
| Marital Status | .30 | .04 | .15*** | .15 | | |
| Step 2 | | | | | .06*** | .14 |
| Constant | 3.10 | .27 | | | | |
| SES | -.11 | .02 | -.12*** | -.13 | | |
| Age | -.003 | .003 | -.02 | -.02 | | |
| Marital Status | .24 | .04 | .12*** | .12 | | |
| MaCES24 | .000 | .002 | -.01 | -.01 | | |
| Social Cohesion | .05 | .04 | -.02 | -.02 | | |
| Neigh Safety | -.17 | .04 | -.12*** | -.09 | | |
| Environment | .10 | .05 | -.05 | .04 | | |
| Satisfaction | .02 | .03 | .02 | -.04 | | |
| Accessibility | -.13 | .03 | -.11*** | -.09 | | |
| Housing Sat | -.03 | .01 | -.10*** | -.10 | | |
| Stability | -.001 | .002 | -.02 | -.02 | | |
| Step 3 | | | | | .008*** | .15 |
| Constant | 3.30 | .29 | | | | |
| Age | -.003 | .003 | -.02 | -.02 | | |
| Marital Status | .25 | .04 | -.12*** | .13 | | |
| SES | -.11 | .02 | -.12*** | -.12 | | |
| Embeddedness | -.005 | .003 | -.06 | -.04 | | |
| Social Cohesion | .05 | .04 | .03 | .03 | | |
| Neigh Safety | -.17 | .04 | .03*** | -.10 | | |
| Environment | -.09 | .05 | -.04 | -.04 | | |
| Neigh Satisfaction | .02 | .03 | .02 | .02 | | |
| Accessibility | -.13 | .03 | -.11*** | .10 | | |
| Housing Sat | -.03 | .01 | -.11 | -.10 | | |
| Stability | -.001 | .002 | -.02 | -.02 | | |
| Safety*MaCES | .05 | .03 | -.05 | .02 | | |
| Stability*MaCES | .004 | .002 | .08* | .05 | | |
| SocialCoh*MaCES | -.02 | .02 | -.02 | -.02 | | |
| Satis*MaCES | -.02 | .02 | -.02 | -.02 | | |
| Access*MaCES | -.002 | .03 | .002 | .002 | | |
| Enviro*MaCES | -.04 | -.02 | -.04 | -.03 | | |
| Hou-Sat*MaCES | .03 | .02 | .03 | .03 | | |

Note *sr* = semi partial correlation coefficient; *$p$<.05; **$p$<.01; ***$p$<.001

Figure 1 visually demonstrates the relationship between loneliness and housing stability moderated by cultural identity. The interaction result supports the increase in housing stability (high score) linked with higher emotional loneliness scores (decrease in loneliness), and this effect is moderated by cultural identity. This establishes that having a high cultural identity and housing stability are associated with low emotional loneliness. This effect is particularly evident with individuals that have a strong cultural identity with living in secure housing for years.

**Figure** 1

*Moderation of the Effect of Housing Stability on Loneliness by Cultural Identity*




Note: Values on the y-axis came from the intercept in the regression equation; CI: Cultural Identity.

Hierarchical multiple regression was used to assess the ability of cultural identity and neighbourhood and housing variables (MaCES, social cohesion, neighbourhood safety, environmental qualities, satisfaction, accessibility and housing satisfaction and stability and their interaction with each other) to predict levels of anxiety, after controlling for the influence of standard of living (SES), marital status and age.

Table 13 shows that when standard of living (SES), marital status and age were entered at Step 1, it explained 7% of the variance in anxiety. After entering cultural identity, neighbourhood and housing support variables at Step 2 the total variance established by the model as a whole was 11%, $F$ (11, 2045) = 23.45, $p < .001$. These measures explained an additional 5% of the variance for anxiety after controlling for age, marital status and SES, R squared change = $F$ change (8, 2045) = 12.89, $p<.001$. In Step 2, the measures of neighbourhood safety, accessibility and housing satisfaction were statistically significant, with value housing satisfaction recording a higher semi partial correlation ($sr$ = .08, p < .01). than the neighbourhood safety ($sr$ = -.06, p < .01), accessibility ($sr$ = -.06, $p < .01$) and social cohesion ($sr$ = -.06, p < .01). At Step 3, interactions between cultural identity, neighbourhood and housing support variables were entered. The total variance explained by Step 3 as a whole was 11%, $F$ (18, 2038) = 14.63, p < .001. These interactions explained only an additional 0.2% of the variance in depression after controlling for all measures in step 1 and 2, R squared change = .002, $F$ change (7, 2038) = .80, $p<.01$. However, in Step 3, there was no significant interaction between the measures ($p$'s > .05).

**Table** 13

*Summary of Hierarchical Regression analysis for variables predicting anxiety*

| Step and predictor variable | *B* | SE *B* | Beta | *sr* | Change in $R^2$ | Adj. $R^2$ |
|---|---|---|---|---|---|---|
| Step1 | | | | | .07*** | .07 |
| Constant | 1.4 | .07 | | | | |
| SES | .06 | .01 | .21*** | .21 | | |
| Age | .004 | .001 | .10*** | .10 | | |
| Marital Status | -.05 | .01 | -.08*** | -.08 | | |
| | | | | | | |
| Step2 | | | | | .05*** | .11 |
| Constant | 1.0 | .09 | | | | |
| SES | .04 | .01 | .14*** | .13 | | |
| Age | .004 | .001 | .08*** | .09 | | |
| Marital Status | -.03 | .01 | -.05* | -.05 | | |
| MaCES24 | .000 | .001 | -.01 | -.01 | | |
| Social Cohesion | -.03 | .01 | -.06** | -.06 | | |
| Neigh Safety | .08 | .01 | .17 | .13 | | |
| Environmental | .03 | .02 | .01 | .01 | | |
| Satisfaction | -.02 | .01 | -.07*** | -.06 | | |
| Accessibility | .03 | .01 | .07** | -.06 | | |
| Housing Sat | .01 | .002 | .09*** | .08 | | |
| Stability | .000 | .001 | -.01 | -.01 | | |
| | | | | | | |
| Step 3 | | | | | .002 | .11 |
| Constant | .99 | .09 | | | | |
| Age | .004 | .001 | .08*** | .09 | | |
| Marital Status | -.03 | .01 | -.05** | -.05 | | |
| SES | .04 | .01 | .14*** | .13 | | |
| MaCES24 | .001 | .001 | .02 | .02 | | |
| Social Cohesion | -.04 | .01 | -.06** | -.06 | | |
| Neigh Safety | .08 | .01 | .17 | .13 | | |
| Environmental | .01 | .02 | .01 | .01 | | |
| Satisfaction | -.03 | .01 | -.07* | -.06 | | |
| Accessibility | .03 | .01 | .07** | .20 | | |
| Housing Sat | .01 | .002 | .09*** | .08 | | |
| Stability | .000 | .001 | -.01 | -.01 | | |
| Safety*MaCES | -.01 | .01 | -.03 | .02 | | |
| Stability*MaCES | -.001 | .001 | -.05 | -.04 | | |
| Social-Coh*MaCES | -.002 | .01 | -.01 | .-.01 | | |
| Satis*MaCES | -.004 | .01 | -.01 | -.01 | | |
| Access*MaCES | .002 | .01 | .01 | .004 | | |
| Enviro*MaCES | .003 | .01 | .01 | .01 | | |
| Hou-Sat*MaCES | <.001 | .01 | <.001 | <.001 | | |

Note *sr* = semi partial correlation coefficient; *p<.05; **p<.01; ***p<.001

### 4.3 Summary

The heirarchial multiple regression results overall indicated that the participants reporting their perceptions of pyschological distress associated with housing and neighbourhood supports were small or were not significant After controling for effects of age, SES and martial status the multiple regression results showed no significant interaction scores for depression and anxiety. There was an interaction that cultural identity moderated a significant relationship between  housing stability and loneliness scores.

# Chapter 5: Discussion

## 5.1 Introduction

This study explored whether cultural identity with neighbourhood supports, and housing supports had an influence on kaumātua experiencing psychological distress in Aotearoa. Cultural identity was specifically focused on for Māori participants as a protective factor, and it was hypothesised that perceptions of housing and neighbourhood supports would also be important predictors of mental health and wellbeing outcomes.

## 5.2 H1. Cultural Identity and psychological distress

Hypothesis one was only supported by a significant negative relationship between proficiency and depression. The cultural efficacy and identity engagement (labelled proficiency in the present results) subscale of the MMMICE3 assesses self-evaluation of the ability to contribute to and participate in Māori cultural settings and active commitment to practicing Māori culture. Literature has also reported that kaumātua with a secure identity have reduced depression levels through such proficiency. For example, Muriwai et al (2015) used MMMICE3 affiliation and cultural efficacy subscales with a psychological distress scale related to depression and anxiety in a multivariate regression analysis. They found that Māori participants aged 18 to 69 years old with a high level of cultural efficacy reported low scores on the Kessler 6 scale. Matika et al's (2017) research analysed rumination and negative thinking (as aspects of depression) with cultural efficacy and self-esteem among Māori participants aged 18 to 69 years old. They also found high cultural efficacy positively associated to self-esteem indicated with lower levels of rumination. The nature of cultural efficacy's active commitment and confidence to engage in Māori settings and activities is related to lower levels of depression for kaumātua.

The other aspects of cultural identity assessed were Māori cultural embeddedness (focused on an individual's learnt experiences of cultural actions, knowledge and practices), whanau efficacy (affiliation-the extent to which an individual accepts their iwi and hapu identity), marae attendance and te reo use. These aspects were not correlated with emotional loneliness, depression or anxiety among kaumātua.

This lack of a relationship between depression and cultural identity supports Muriwai et al's (2015) finding that depression and anxiety was not related to Māori participants (18 to 69 years old) having high or low cultural efficacy (a subscale of the MMMICE2). However, other research has highlighted the significance of having high proficiency in te reo which enhances ethnic identity (cultural identity) which in turn mitigates and buffers mental health conditions such as depression (Harding et al, 2024; Matika et al, 2021). Mclean (2021) found that the MMMICE3 subscale of embeddedness was correlated with depression and anxiety (although not with emotional loneliness) for kaumātua during the COVID pandemic.

The results on emotional loneliness and cultural identity are also similar to findings in other research. Parata (2023) which found no significant negative relationship, using only the MMMICE3 cultural identity measure. Currently this is the only study that had correlated the MaCES (embeddedness) and emotional loneliness, as researcher could not find other published literature specifically correlating the MaCES with emotional loneliness. At this time, it can be interpreted to suggest that cultural identity is not an important aspect in reducing feelings of emotional loneliness for kaumātua.

However, contradictory findings suggest otherwise. Te Oranga Hinengaro Māori Mental Wellbeing report (Russell, 2018) used a cultural identity measure assessing speaking te reo, knowing their pepeha (whanau efficacy), visiting ancestral marae and practising manaakitatanga (care and support; embeddedness). They report that those who knew their

pepeha were significantly less likely to report feeling isolated. Other previous Aotearoa research has found a significant negative relationship between cultural identity and loneliness (Apiti, 2020; McLean, 2021; Muriwai et al, 2015; Wright-St Clair et al, 2017).

Finding quantitative literature on kaumatua, MaCES, MMMICE cultural identity and anxiety has been challenging. Research has highlighted that anxiety in older Māori may be under or not reported by kaumātua which may be due to feelings of being whakamā (embarrassment, shame) (Sachdev, 1990). Russell (2018) reported that kaumātua have a higher prevalence (about one and a half times) of experiencing anxiety compared to older persons who are not Māori. Murwai et al (2015) suggested that using traditional, culturally relevant coping strategies such as karakia or mentoring rangatahi (having a purpose) naturally lowers anxiety (Muriwai et al, 2015). To date there is little evidence exploring these suggestions further. Although results from this research between most of the cultural identity measures with depression, anxiety and loneliness were not significant, there have been other research findings that contradict the present results.

Some results support the expectation that kaumātua with a secure cultural identity and who are culturally competent when participating in cultural engagements and activities are less likely to experience aspects of psychological distress. This translates to the protective nature of cultural identity against the negative aspects of loneliness, depression and anxiety for kaumatua (Apiti, 2020; Bennett & Liu, 2018; Hokowhitu et al, 2020; Shelford, 2025). The present findings suggest that certain aspects of cultural identity, such as proficiency in contributing to and participating in Māori cultural settings and active commitment to practicing their culture, may be more important in relation to mental wellbeing. Because the current findings are sometimes contradicted by other research, a stronger focus on which aspects of Māori cultural identity are being measured in future research will contribute to understanding this relationship.

### 5.3 H2. Cultural Identity with Neighbourhood and Housing Supports

Correlation results for hypothesis two indicated relationships between neighbourhood social cohesion and cultural efficacy and identity engagement, Māori cultural embeddedness scale (embeddedness), Marae, Te Reo20 and Te Reo24, and between neighbourhood satisfaction and environmental qualities with Māori cultural embeddedness scale. This can be interpreted that kaumātua with a secure cultural identity tend to have higher trust levels within their local community and culturally related perceptions of their neighbourhood.

Correlations between Māori cultural embeddedness with environmental qualities and neighbourhood satisfaction suggest that kaumātua perceptions are linked with the area they are living in and connected to environmental and satisfaction factors. Panelli and Tipa (2007) argued that health is inseparable from the environment and that Māori connection to the whenua is a culture-environment element; their home becomes their tūrangawaewae and if it degrades so does their wellbeing. Smith et al (2024) researched kaumātua identity tikanga knowledge and practices, te reo proficiency and whakapapa, tribal identity variables which are similar to embeddedness variables. Their research emphasises the importance of policy that promotes high-quality, intergenerational housing and community-cultural connections for older Māori; suggesting urban papakāinga (communal village) style housing that promotes safety, closeness to whanau, access to recreational areas and community services, and where use of te reo in everyday life within this space is normalised (Smith et al, 2024).

The Social Cohesion in New Zealand 2026 report (Helen Clark Foundation, 2026) found social cohesion in older Māori as declining which aligns with broader older trends of high alienation and detachment with an increase in loneliness; they found that marae attendance helps to mitigate financial stress, and prevents isolation. The report described that interaction with the marae acts as a tūrangawaewae that fosters social cohesion dimensions of belonging, intergenerational connections (meaningful interactions), shared activities with different age

groups, provides purpose, and reduction of psychological distress (Helen Clark Foundation, 2026).

### 5.4 H3. Housing Stability, Neighbourhood Supports, Neighbourhood Social Cohesion and Psychological Distress

Results showed that neighbourhood safety, neighbourhood environmental qualities, neighbourhood accessibility and neighbourhood satisfaction are negatively correlated to loneliness and depression. Neighbourhood satisfaction was negatively correlated to anxiety, neighbourhood safety and neighbourhood accessibility were positively correlated with anxiety the correlations were only of a weak significant relationship. Social cohesion was positively correlated to neighbourhood safety, neighbourhood satisfaction, neighbourhood accessibility, and stability had no relationship to social cohesion or psychological distress measures.

This indicated that kaumatua who had negative perceptions of their neighbourhood were more likely to experience higher levels of emotional loneliness and depression. Those who had lower satisfaction were more likely to experience anxiety.

Housing stability did not indicate any correlation with emotional loneliness, depression or anxiety. This may be due to how housing stability was measured; the item asked how long kaumātua lived at their address when completing the survey may have been the reason why there was no correlation.

These findings contribute to the research showing the importance of neighbourhood qualities to wellbeing. Wood's (2018) review discussed other research on kaumātua perspectives that lived on or close to ancestral territory having a great sense of attachment that they maintained so whanau can return too. For urban kaumātua participants in their research not living on or close to their ancestral territory were not feeling disconnected, but an extension of their home

and sense of attachment (Wood, 2018). However, they discussed the differences between rural and urban kaumātua in regards to disability and chronic health; rural kaumātua had more whanau-community support and urban kaumātua had greater access to services, they felt more isolated and mental distress (Wood, 2018). Other finding were home ownership disparities, reliance on expensive private rentals or unstable temporary state housing and multi-generational overcrowding (Wood, 2018).

Davis (2025) qualitative research reported housing vulnerability and instability for kaumātua after COVID in eastern Christchurch affecting their quality of life amplifying psychological distress. However, strong neighbourhood trust, community engagement, and family support act as protective buffers (Davies, 2025). Hall (2021) discusses the importance natural environment neighbourhood qualities, accessibility to amenities, social cohesion, neighbourhood satisfaction and perceived safety as drivers of wellbeing. Hall further highlights for kaumātua socioeconomic status (SES) and access to safe, secure, and culturally appropriate living spaces significantly affects collective resilience (Hall, 2021).

### 5.5 H4. Cultural Identity and Social Cohesion

The positive effects from having a secure and stable housing, strong sense of community and relationships in the neighbourhood mitigates mental distress for kaumātua with a robust cultural identity. The positive correlation between cultural identity (except te reo) and neighbourhood social cohesion was not unexpected, as connections between Māori cultural perspectives align with aspects of neighbourhood social cohesion. Literature that supports this view is Apiti (2020) cultural identity operates as a vital connection for personal wellbeing and collective social integration, it is a proactive shield, not a passive resource, serving as the foundation for kaumātua wellbeing and community unity. During COVID, research found iwi and hapū were successfully mobilised to provide direct social, economic, and health support on ancestral lands despite this resilience, the lockdowns severely disrupted

vital cultural customs particularly tangihanga (funeral rites) causing deep spiritual strain (Morgan et al, 2022). Hokowhitu et al (2020) studied the Kaumātua Mana Motuhake Pōi program (KMMP) outlined a culturally centred, community-led framework initiative. The study looked at the Kotahitanga Research Network; academic researchers work in equal, collaborative partnership with ten local service providers such as the Rauawaawa Kaumātua Charitable Trust. The research network provided a blueprint for how government agencies, health sectors, and public policies can collaborate ethically with Māori, refocusing to a cost-effective, peer-driven model fostering community self-determination (mana motuhake), away from a top-down medical management model (Hokowhitu et al, 2020).

### 5.6 H5. Moderating Effects of Cultural Identity on Housing Stability and Loneliness

Hierarchical multiple regression results indicated an interaction in which the relationship between loneliness and housing stability was moderated by Māori cultural embeddedness. This interaction suggests that the longer kaumātua lived in their current address, the lower levels of loneliness they experienced. This effect is markedly strengthened for those with a secure cultural identity.

These findings emphasise the importance of housing stability for kaumātua wellbeing. The Ngāti Hine Kaumātua Needs Assessment Interim Report highlights the severe housing insecurity challenges facing kaumātua in Northland, declining home ownership 24.6% (below national Māori average), and three out of four kaumātua in rental accommodation or shared family homes (Eruera et al, 2025). Eruera et al (2025) reinforces the importance of culturally integrated environments, marae-centric housing models of iwi-led housing initiatives promoting marae support (consistent marae attendance) and reinforcing cultural values of whanaungatanga (connections), kaitiakitanga (guardianship), manaakitanga (care), rangatiratanga (autonomy), and haumarutanga (safety) that are important to kaumātua.

Their findings provide further evidence for stable housing situations for older Māori. As an example, Smith et al (2026) discusses Māori age-friendly housing and villages for kaumātua, whose characteristics are described as providing haporitanga (community and socialisation opportunities). They explain further that a urban style papakāinga (communal Māori housing, villages) can offer these characteristics for kaumātua; connecting health and place by integrating traditional cultural values into modern housing design, fostering community, physical mobility, and a sense of belonging (Smith et al., 2026).

### 5.7 Kaumātua Wellbeing and SES

Socioeconomic status (SES) is strongly related to better health and quality of life. The higher a person's standard of living the greater their physical, mental and social wellbeing. SES is immensely powerful; it shapes intergenerational life chances for Māori. In relation to the present findings, Deobhakta (2025) has noted that wellbeing outcomes for kaumātua is impacted upon through structural housing inequalities, compromised physical environments, and fragmented community trust which is triggered by lower socioeconomic status (SES) for older Māori. SES for Māori has roots in historical and the ongoing impacts of colonisation and previous literature has outlined its legacy (Davies, 2025; Wood, 2018). The health and cultural wellbeing of older Māori is deeply influenced by housing, the environment and financial security. Thom (2021) found higher rates of land confiscation and alienation correlated with cultural disconnection; reduction in proficiency in te reo Māori and difficulty participating in cultural practices. Literature has expressed the real-life impacts of poverty, disadvantage and inequality for indigenous older populations and for kaumātua these disparities have impacted on them achieving a satisfying and secure quality of life. Kaumātua have a seven year life expectancy gap, higher deprivation due to lower homeownership vulnerable to escalating rental costs on fixed incomes, raising mokopuna without formal financial support (Deobhakta, 2025; Shelford, 2025). Stephens et al (2011) emphasizes the

implications of SES is connected to the individual's social support networks (that dimmish as they age), lifetime income and resources that directly influences their health; cardiovascular disease, cognitive decline, depression and perceived loneliness.

The effects of SES in the present study support its importance in shaping mental health through living situations and cultural identity, and the need for further research into the implications of these findings.

### 5.8 Implications

This research study adds to the increasing literature that investigates kaumātua wellbeing. It explored kaumātua wellbeing in relation to their perceptions of their cultural identity, their neighbourhood and housing circumstances associated to the impact from psychological issues.

Key findings confirmed the legitimacy and importance of cultural identity for kaumātua that higher cultural efficacy and identity engagement were related to lower levels of depression. Being able to participate and engage competently in Māori cultural settings translates to positive feelings for older Māori.

In the first instance these findings support the need to foster cultural identity among kaumātua. Examples of initiatives beginning this work include the Kaumātua Mana Motuhake Pōi program (KMMP) which is a culturally centred, community-led framework initiative (Hokowhitu et al, 2020). The Kotahitanga Research Network, in which academic researchers work in equal, collaborative partnership with ten local service providers such as the Rauawaawa Kaumātua Charitable Trust, has provided a blueprint for how government agencies, health sectors, and public policies can collaborate ethically with Māori, refocusing to a cost-effective, peer-driven model fostering community self-determination (mana motuhake), away from a top-down medical management model (Hokowhitu et al, 2020).

Further access to marae-based or kaupapa-Māori kaumātua day programmes; community grassroots and iwi organisations focusing on their cultural participation, health and wellbeing that reduces the negative aspects of mental distress.

In a second instance, kaumātua wellbeing is based on their perceptions of the communities they live in. Their neighbourhood and housing situation significantly influences their mental health. The previous Government took a wellbeing approach supporting initiatives such as papakainga style housing, while the current Government's neo-liberal view of balancing supply and demand expects the private housing sector to provide housing solutions that are cost effective and sustainable (Cram & Munro, 2020; Helen Clark Foundation, 2026). Ministry of Social Development (2026) report stated at the end of April there were 3,624 people that were 65+ who had applied for the social housing register (highest of all age groups), up from October 2017 when there were 666, and December 2021 there were 2,736 (Hocking, 2022). The growing number of older Māori experiencing housing insecurity cannot be ignored, and solutions are required to address this issue. Multigenerational living and housing arrangements supports whānau-oriented living for kaumātua and their whānau. Progressive home ownership where Government funds are designed to lower financial barriers, allowing multi-generational households to pool incomes and share equity with a housing provider to purchase their home. Homeownership options for older Māori need prioritisation, iwi-led housing like Māori and Iwi Housing Innovation (MAIHI) framework face several systematic and legislative challenges such as bureaucratic decision-making; dealing with multiple government agencies and inconsistent regional infrastructure funding delays. A streamed-lined system that supports fast-track infrastructure development, local government council policies, reduction in high compliance fees, and unrestricted planning regulations that delay papakāinga (communal housing) developments. The National Environmental Standards for Papakainga (NES-P) is a fast-track streamlined infrastructure

reform 2026 to help accelerate smaller housing developments however, they do not address and help with issues for kaumatua of infrastructure on remote ancestral land, securing bank mortgages, access to landlocked whenua, certain exceptions to permitting still require council assessment and water access needs separate regional consenting. It also does not address the Māori Land Court delays because of multiple owners which requires complex consensus-building and navigations need streamlining. Even through the NES-P provides an expedited regulatory pathway cutting out major planning delays for papakinga builds. Delivering homes to whānau, and to bridge the gap between planning laws and real-world construction issues, central Government and local councils must coordinate on simultaneous solutions in infrastructure funding, wastewater management, and access to financial lending for kaumatua.

Other findings confirm challenges kaumatua navigate in their daily lives; socioeconomic disparities that give them access to stable and secure housing, and neighbourhood options for kaumatua that limits their choices (Helen Clark Foundation, 2026). Increasing cost of living has impacted on most households in Aotearoa, however for kaumatua it has been especially impactful. Allen et al (2025) found between 2019 to 2024 there was an increase of 24.1% on household living costs this was higher for low-income households; superannuitant and Māori, they found 31% of their income was paid on rent. Increased Governmental financial support as barriers for older Māori such as access to supplementary hardship payments and accommodation supplement and if they are receiving these supports, they still find living costs difficult to manage (Cram & Munro, 2020). Focused Governmental older Māori subsidy support is required for rising rental and living costs and earlier access to appropriate social housing options for kaumātua.

Kaumātua tend to have lower KiwiSaver balances and receive less NZ superannuation due to life expectancy on average, and the superannuation rate is premised on older people living in

a mortgage-free owner-occupied home (Cram & Munro, 2020). Lower life expectancy and experiencing earlier chronic disabilities is a reality for Māori, so accessing KiwiSaver and reinstating the first home grant (free government grant $10,000 dollars) will support Māori homeownership aspirations.

Implications of unaddressed mental health issues extends beyond standard psychological symptoms. The negative outcomes for kaumatua are physical and cognitive deterioration, loss of traditional knowledge; role of holders and transmitters of mātauranga (Māori knowledge), and wairua disconnection; disrupts their holistic health and cultural balance.

To support kaumātua, interventions must be holistic and culturally aligned rather than purely clinical and general assessments. Culturally informed care; integrate te ao Māori, practices like karakia (prayer) and pure (cleansing rituals) alongside standard support, resource supports; information and reading on the needs and wellbeing of older Māori, and specialized guides on recognising mental distress conditions.

### 5.9 Future Research

There is a significant gap in the literature regarding anxiety among older Māori, as most existing research focuses primarily on younger populations. Furthermore, available studies rarely separate anxiety; instead, anxiety is usually grouped under the general context of psychological distress alongside loneliness and depression in wellbeing research. Future research should specifically investigate anxiety in kaumātua to explore whether having a secure cultural identity can act as a buffer against it’s the negative effects of anxiety. Cultural identity scales indicated no correlation with emotional loneliness except when the Māori cultural embeddedness scale was a moderator for housing stability and emotional loneliness. This could be because Māori have a strong collectivist-culture, it may also be because the way we measured emotional loneliness was not reliable.

Another area of future studies should investigate this further, looking closely at how cultural identity affects feelings of loneliness, depression and anxiety. Establishing cultural identity variables that align to what kaumātua believe is culturally important and is essential to holistic health. Te reo proficiency; being confident and competent in cultural engagement, whakawhānaungatanga; social connection and belonging, taonga tuku iho; the passing down of knowledge to mokopuna (kaumatua role). Oranga wairua (spiritual); importance of karakia (prayer) and taiao (connection to nature), Māori healing (rongoā, mirimiri); traditional practices for pain, and mana motuhake (autonomy); making own health decisions are essential for holistic health. For future research the integration of these cultural values that are more relevant for current holistic health helping kaumātua cope with stress, manage mental distress and heal from trauma. Investigating further on specific cultural practices and the importance to kaumātua these traditional practices are in managing mental and physical health issues for them.

### 5.10 Limitations

The poor overall correlation between the measures may also be due to other factors. The high missing data from the low response rate by participants in the 2020 HWR survey may have contributed to the poor correlations. This reduces the completed cases affecting the *N* (smaller sample size) which diminishes the statistical power of the study and widens confidence intervals. This can critically impact on the study's design as well as the hypothesis and not being able to calculate from an effective sample size to reach an accurate conclusion (Serdar et al, 2021).

Data quality is heavily influenced by a participant's ability, interest, and opportunity to respond in a survey. When surveys are lengthy or demanding, respondent burden can skew results. Here, the data likely reflects only the older Māori who had the time, motivation, or

capacity to finish the survey. Excluding those who could not participate creates a biased, unrepresentative sample, which directly compromises the research validity.

### 5.11 Conclusion

This study used Health, Work, and Retirement study data to explore how cultural identity factors relate to emotional loneliness, depression and anxiety among kaumātua. It addresses an under-studied area; the overlapping impacts of Māori cultural identity, housing, and neighbourhood perceptions on well-being in later life. The study used various statistical methods, that investigated the relationships connecting depression, anxiety, and emotional loneliness to key cultural measures, including marae visits, te reo, MaCES, and the MMMICE3 subscales (whānau efficacy and cultural efficacy and identity engagement).

The findings show that cultural efficacy and identity engagement showed a significant relationship with depression and that Māori cultural embeddedness moderated the relationship between housing stability and emotional loneliness. Neighbourhood and housing support was associated with psychological distress, cultural identity scales, and social cohesion.

Research findings establish that a secure cultural identity significantly enhances the wellbeing of older Māori. Despite the diverse influences shaping older Māori realities, data from this sample confirms that cultural identity remains a powerful factor of health. Future recommendations encourage the development of tailored health and social services that proactively support kaumātua in accessing and practicing their culture in appropriate and stable housing situations.

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